

## Foreword

Applicants can better organize themselves for a disaster event by proactively assembling a Debris Management Plan that is tailored to their jurisdiction. By having an established plan prior to an event, the management and staff will be prepared to deploy resources, respond to immediate threats, collect debris from the jurisdiction, and dispose of debris in a timely manner. The community recovery is dependent upon the efficient removal of debris from public streets and properties.

In the event of a federally declared disaster, the FEMA Public Assistance (PA) grant can assist applicants in the costs of the disaster-related debris removal operations. By incorporating the PA eligibility criteria into the Debris Management Plan, applicants can readily provide the necessary documentation required in order to receive PA grant funding.

The intent of this document is twofold. The first purpose of this document is to give applicants an overview of the PA grant assistance program as it relates to debris eligibility. The second objective is to provide a guide for applicants to assemble a Debris Management Plan that will consider the PA grant eligibility requirements.

At the end of each planning chapter is a list of questions that the staff will want to consider when they begin the planning process. This is followed by a “To Do Checklist” to begin the planning staff’s formulation of the Debris Management Plan.

We encourage local officials to review their community’s vulnerability to a disaster and to consider how to manage a large-scale debris clearance, removal and disposal operations should the need arise. Your state emergency management agency and the Federal Emergency Management Agency (FEMA) regional office may provide additional technical assistance in your area.

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## Acronyms

C&D	Construction and Demolition
CBRA	Coastal Barrier Resources Act
CBRS	Coastal Barrier Resources System
CFR	Code of Federal Regulations
DFO	Disaster Field Office
DMS	Debris Management Site
DMTF	Debris Management Task Force
DOT	Department of Transportation
DPAO	Deputy Public Assistance Officer
DPW	Department of Public Works
DRM	Disaster Recovery Manager
EO	Executive Order
EOC	Emergency Operations Center
ERT	Emergency Response Team
ESF #3	Emergency Support Function - Public Works and Engineering
ESF #12	Emergency Support Function – Energy EST Emergency Support Team
ER	Emergency Relief
FCO	Federal Coordinating Officer
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FRP	Federal Response Plan
GAR	Governor’s Authorized Representative
GIS	Geographic Information System
GPS	Global Positioning System
HHW	Household Hazardous Waste
IA	Individual Assistance
JFO	Joint Field Office
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRCS	National Resources Conservation Service
OCC	Office of Chief Counsel
OFA	Other Federal Agencies
OIG	Office of Inspector General
MA	Mission Assignment
PA	Public Assistance
PAC	Public Assistance Coordinator
PAO	Public Assistance Officer
PDA	Preliminary Damage Assessment
PIO	Public Information Officer
PNP	Private Nonprofit
PO	Project Officer

PPDDR	Private Property Demolition and Debris Removal
PW	Project Worksheet
RCRA	Resource Conservation and Recovery Act
RFQ	Request for Qualifications
ROC	Regional Operation Center
SBA	Small Business Administration
SCO	State Coordinating Officer
SHPO	State Historic Preservation Officer
SWM	Solid Waste Management
TAC	Technical Assistance Contractor
TDSR	Temporary Debris Storage and Reduction
USACE	United States Army Corps of Engineers
USDA	U.S. Department of Agriculture
USEPA	United States Environmental Protection Agency

## Terms Used in this Document

**Burning.** Reduction of woody debris by controlled burning. Woody debris can be reduced in volume by approximately 95 percent through burning. Air curtain burners are recommended because they can be operated in a manner to comply with clean-air standards.

**Chipping or Mulching.** Reducing wood related material by mechanical means into small pieces to be used as mulch or fuel. Woody debris can be reduced in volume by approximately 75 percent, based on data obtained during reduction operations. The terms “chipping” and “mulching” are often used interchangeably.

**Debris.** Scattered items and materials broken, destroyed, or displaced by a natural disaster. Example: trees, construction and demolition material, personal property.

**Debris Clearance.** Clearing the major road arteries by pushing debris to the roadside to accommodate emergency traffic.

**Debris Disposal.** Placing mixed debris and/or residue from volume reduction operations into an approved landfill.

**Debris Management Site.** (Formerly known as Temporary Debris Reduction and Disposal Site.) A location where debris is temporarily stored until it is sorted, processed, reduced in volume and/or taken to a permanent landfill.

**Debris Removal.** Picking up debris and taking it to a debris management site or permanent landfill.

**Department of Public Works (DPW).** Department typically responsible for clearing debris from the roads and rights-of-way.

**Department of Solid Waste Management (SWM).** Department responsible for managing and overseeing the collection and disposal of garbage, trash and disaster-related debris.

**Final Debris Disposal.** Placing mixed debris and/or residue from volume reduction operations into an approved landfill.

**Force Account Labor.** State, tribal or local government employees engaged in debris removal activities.

**Garbage.** Waste that is regularly picked up by the Department of Solid Waste Management. Example: food, plastics, wrapping, papers.

**Hazardous Waste.** Material and products from institutional, commercial, recreational, industrial and agricultural sources that contain certain chemicals with one or more the following characteristics, as defined by the Environmental Protection Agency: 1) Toxic, 2) Flammable, 3) Corrosive; and/or 4) Reactive.

**Household Hazardous Waste (HHW).** Used or leftover contents of consumer products that contain chemicals with one or more of the following characteristics, as defined by the Environmental Protection Agency: 1) Toxic, 2) Flammable, 3) Corrosive and/or 4) Reactive. Examples of household hazardous waste include small quantities of normal household cleaning and maintenance products, latex and oil based paint, cleaning solvents, gasoline, oils, swimming pool chemicals, pesticides, and propane gas cylinders.

**Immediate Threat.** An immediate threat is the threat of damage to improved private or public property or to lives, public health, and safety as a result of an event that could reasonably occur within five years.

**Hot Spots.** Illegal dump sites that may pose health and safety threats.

**Legal Responsibility.** In the context of debris management, this responsibility is established by statute, formally adopted by legal code, or ordinance that gives local government officials authority to remove debris from or to perform other work on public and/or private property.

**Monitoring.** Actions taken to ensure that a contractor complies with the contract scope-of-work.

**Mutual Aid Agreement.** A written understanding between communities and States obligating assistance during a disaster. (See Response and Recovery Directorate Policy Number 9523.6, Mutual Aid Agreements for Public Assistance, dated August 17, 1999.)

**National Response Plan.** A plan developed to facilitate the delivery of all types of Federal response assistance to States following a disaster. It outlines the planning assumptions, policies, concept of operations, organizational structures and specific assignments and agencies in providing Federal response assistance to supplement the State, tribal and local response efforts. Mobilizes resources and conducts activities to address the consequences of any major disaster or emergency that overwhelms the capabilities of State and local governments.

**Passes (sometimes called Sweeps).** The number of times a contractor passes through a community to collect all disaster-related debris from the rights-of-way. Usually limited to three passes through the community.

**Recycling.** The recovery and reuse of metals, soils and construction materials that may have a residual monetary value.

**Rights-of-Way.** The portions of land over which a facility, such as highways, railroads, or power lines are built. Includes land on both sides of the highway up to the private property line.

**Scale/Weigh Station.** A scale used to weigh trucks as they enter and leave a landfill. The difference in weight determines the tonnage dumped and a tipping fee is charged accordingly. Also may be used to determine the quantity of debris picked up and hauled.

**Temporary Debris Reduction and Storage Site.** See Debris Management Site (DMS).

**Tipping Fee.** A fee based on weight or volume of debris dumped that is charged by landfills or other waste management facilities to cover their operating and maintenance costs. The fee also may include amounts to cover the cost of closing the current facility and/or opening a new facility.

**Trash.** Non-disaster related yard waste, white metals, or household furnishings placed on the curbside for pickup by local solid waste management personnel. A resident must call for pickup. Not synonymous with garbage.

**United States Army Corps of Engineers (USACE).** A component of the U.S. Army that is responsible for constructing and maintaining all military bases and other government-owned and controlled entities. The USACE may be used by FEMA when direct Federal assistance, issued through a mission assignment, is needed.

**White Goods.** Household appliances, such as refrigerators, freezers, stoves, washers and dryers.



# **PART I**

## **Public Assistance Eligibility**

## Introduction

The Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 93-288, as amended, 42 U.S.C. §5121, et seq. (hereinafter referred to as the Stafford Act), authorizes the Public Assistance (PA) Program to award grants to state and local governments and eligible private nonprofit (PNP) entities in order to assist them in their disaster response and recovery activities. Specifically, the program provides assistance for debris removal, implementation of emergency protective measures, and permanent restoration of infrastructure.

The PA Program is a partnership between FEMA, and state and local officials. FEMA is responsible for managing the program, approving grants, and providing technical assistance to the state and applicants. The state provides information to potential PA applicants (local or municipal governments, eligible private non-profit organizations (PNPs), and Federally-recognized Indian tribes), works with FEMA to manage the program, and is responsible for implementing and monitoring the grants awarded under the program. Local officials identify the damage, provide information necessary for FEMA to review and approve grant applications, and manage the projects funded under the PA Program.

Local officials are encouraged to review their community's vulnerability to a disaster and to consider their response and recovery activities, specifically in handling debris issues. Property repairs, normal public operations, and community recovery begins once debris is cleared from public rights-of-way.

Debris removal operations can be time-consuming and costly. Over the last five years, debris removal operations accounted for approximately 27 percent of the disaster recovery costs. FEMA urges local officials to develop their Debris Management Plans to execute a large-scale debris removal and disposal operations. By developing a Debris Management Plan, communities will be better prepared to address the disaster-related debris in a time-efficient manner, and therefore be able to expedite the recovery process. Additionally, a sound and properly executed Debris Management Plan may better position an applicant for PA grant assistance.

This document provides local officials with a description of the PA Program's eligibility criteria specific to debris removal operations, and guidance in planning, mobilizing, organizing and controlling a debris removal and disposal operation. All or portions of this document may be used depending on the size of the debris removal operation.



## **Chapter 1**

### **Public Assistance (PA) Debris Removal Eligibility**

#### **Chapter Highlights:**

- ◆ PA Grant Program
- ◆ Eligibility Criteria
  - Definition of Eligibility
  - Applicant
  - Facility
  - Work
  - Reasonable Costs
  - Special Considerations
    - National Environmental Protection Act
    - Executive Orders
  - Funding Limitations
    - Duplication of Benefits
      - Other Federal Agencies
      - Insurance Settlements
      - Salvage Value

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### **PA Grant Program**

The federal government may provide grants to reimburse the response and recovery efforts of state and local governments for Presidentially declared disasters. To receive supplemental disaster assistance through the PA Program, applicants must meet FEMA eligibility criteria.

Your organization may conduct debris operations in any manner you deem appropriate. However, only costs associated with applicants, facilities, and work deemed eligible according to FEMA eligibility criteria and special consideration requirements will be reimbursed through the PA program. Therefore, these eligibility criteria and special consideration requirements should be taken into account when developing the Debris Management Plan.

## Eligibility Criteria

**Eligible** means qualifying and meeting the stipulated requirements of the PA grant. The term eligible can be applied to applicants, facilities, work and costs.

**Eligibility** is based on a hierarchy of statute, regulations, policies, fact sheets, guidance documents and disaster specific documents:

- **Statute** is The Robert T. Stafford Disaster Relief and Emergency Assistance Act, as amended, which authorizes the program;
- **Regulations**, published in 44 Code of Federal Regulations (CFR), Parts 13 and 206, implement and interpret the statute;
- **Policies** are written to apply the statute and regulations to specific subjects and situations; and
- **Fact Sheets, guidance documents, and disaster-specific documents** provide clarification and detailed explanations of issues and concerns.

The terms **ineligible** or **not eligible** are used to indicate the subject or action does not qualify for a PA grant.

**Applicant** means a state agency, local government or eligible private nonprofit organization submitting an application to the Grantee (state) for PA assistance. Four types of entities are eligible for PA grants. The types of eligible applicants are:

1. State government agencies, such as:
  - State department of transportation
  - State environmental resources agency
  - State parks agency
2. Local governments, including:
  - Towns, cities, counties
  - Municipalities, townships
  - Local public authorities

3. Private Nonprofit (PNP) organizations or institutions that own or operate facilities that provide certain services otherwise performed by a government agency. Eligible facilities are limited to:

- Educational
- Emergency
- Medical
- Utility
- Custodial care
- Irrigation
- Other essential governmental services, which are open to the general public, and do not fall into one of the categories described above include community centers, homeless shelters, libraries, museums, senior citizen centers, shelter workshops, zoos, performing arts facilities, community arts centers, and health and safety services.

4. Federally recognized Indian Tribes or authorized tribal organizations and Alaskan Native village organizations. This does not include Alaska Native Corporations, which are owned by private individuals. All eligible applicants, except Indian Tribal governments that have been designated as grantees, must submit their requests for assistance through the state.

Since this document speaks to debris issues specifically, it is assumed the city, county, township, or other governing body will be taking responsibility for planning or implementation of the debris operations. The terms “jurisdiction” and “governing body” are used to indicate the eligible applicant planning or implementing the debris management operations.

**A facility** is any publicly or privately owned building, works, system, or equipment, built or manufactured, or an improved and maintained natural feature. Land used for agricultural purposes is not a facility. The eligible facility must be located in the designated disaster area and must be the legal responsibility of the eligible applicant.

FEMA characterizes work eligible for Public Assistance as either emergency or permanent work. These are classified into seven different categories identified by letters A through G. This document discusses only emergency type of work, Category A – Debris Removal and Category B – Emergency Protective Measures.

**Eligible debris work** must meet one or more of the following:

- Eliminate **immediate threats** to life, public health and safety; or
- Eliminate immediate threat of significant damage to improved public or private property; or
- Ensure the economic recovery of the affected community to the benefit of the community-at-large; or
- Mitigate the risk of life and property by removing substantially damaged structures and associated appurtenances as needed to convert property acquired through a FEMA hazard mitigation program to uses compatible with open space, recreation, or wetlands management practices.

An **immediate threat** is the threat of additional damage or destruction from an event which can reasonably be expected to occur within five years.

**Reasonable costs** are both fair and equitable for the type of work that is necessary to clear, remove and dispose of eligible debris on eligible facilities. Reasonable costs for specific work may be established by evaluating historical costs for similar work, analyzing costs for similar work in the region, reviewing national published industry work specific unit costs data, or comparing costs with the FEMA published rates. Costs may include the **applicant's labor**, equipment, and material, and contractor **services** as well as **mutual aid agreements**. Costs are discussed further in Chapter 2, *Costs*.

### ***Special Considerations***

The term “special considerations” is used by FEMA to describe issues other than program eligibility that could affect the scope-of-work and funding for a project. Applicants have a critical role in identifying and resolving special considerations issues. By being aware of the way in which these issues can affect projects, the applicant can assist FEMA by identifying the issues as early as possible and providing the information necessary for review. A brief description of special consideration issues as they relate to debris operations are set forth below.

## **National Environmental Policy Act (NEPA)**

The National Environmental Policy Act (NEPA) requires every federal agency to follow a specific planning process to ensure that agency decision-makers and local governments have considered, and the general public is fully informed about, the environmental consequences of a federal action. This review and consultation process is used to evaluate the impact a project and its alternatives may have on the environment. The review process required by NEPA is usually the vehicle through which FEMA addresses other environmental laws and regulations. The environmental laws and regulations that may impact debris operations are briefly described below.

**Statutory Exclusions.** FEMA is provided with statutory exclusions under Section 316 of the Stafford Act. These exclusions exempt certain actions from the NEPA review process and generally include debris removal, clearance of roads, and demolition of unsafe structures.

It should be noted, however, that compliance with other individual laws, such as the Endangered Species Act, the National Historic Preservation Act, and the Clean Water Act, is still required, even when a project is excluded from NEPA review. If an action is not statutorily excluded, the appropriate level of NEPA review must be determined. Appropriate levels of review are described in the following paragraphs.

### ***Clean Water Act***

The Clean Water Act authorizes the United States Army Corps of Engineers (USACE) to issue permits for the discharge of dredged materials or fill into the waters of the United States. Under Section 404 of the Clean Water Act, the applicant must obtain a permit in any situation where dredging or filling is a component of the project.

Wetlands are considered part of the waters of the United States and are subject to the provisions of the Clean Water Act. Some wetlands, such as marshes and riverine wetlands are easy to recognize. Other sites, such as forested wetlands and agricultural drainage ditches, are more difficult to identify, and some areas that are considered wetlands may not actually be wet for much of the year.

### ***Clean Air Act***

The Clean Air Act was established to protect the quality of the Nation's air resources. Air quality may be affected by projects that are typically funded under the PA Program. Examples include:

- Debris disposal through methods such as burning;
- Collection and disposal of appliances that contain chlorofluorocarbons; and,
- Demolition of damaged structures, which can release dust or harmful substances, such as asbestos, into the air.

### ***Coastal Barrier Resources Act***

The Coastal Barrier Resources Act (CBRA) restricts federal expenditures and financial assistance that encourage development of coastal barriers so that damage to property, fish, wildlife, and other natural resources associated with the coastal barrier is minimized. Coastal barriers are located along the Atlantic and Gulf Coasts and along the Great Lakes. They are identified on FEMA's Flood Insurance Rate Maps as Coastal Barrier Resources System (CBRS) units.

Costs for debris removal and emergency protective measures in designated CBRS units may be eligible for reimbursement through the PA Program provided the actions eliminate the immediate threat to lives, public health and safety and protect improved property.

### ***Resource Conservation and Recovery Act***

The Resource Conservation and Recovery Act requires safe disposal of waste materials, promotes the recycling of waste materials, and encourages cooperation with local agencies. The act applies to disposal of both storm-generated debris and demolition debris and is of particular concern when hazardous materials may be present.

### ***Endangered Species Act***

The Endangered Species Act prohibits federal actions that cause unnecessary harm to species listed as threatened or endangered, or the destruction or adverse modification of the habitat for these species. Endangered species include mammals, fish, birds, reptiles, and amphibians, as well as plants and insects. If a project involves the known habitat of a threatened or endangered species, FEMA

must consult with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service before approving funding for that project.

### ***National Historic Preservation Act***

The National Historic Preservation Act (NHPA) requires a federal agency to consider the effects of its projects on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places. The agency funding the project is required to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment regarding that project. In practice, the council rarely comments on individual federal projects; it does, however, monitor the overall performance of federal agencies in their compliance with NHPA.

Historic properties include districts, buildings, structures, objects, landscapes, archaeological sites, and traditional cultural properties that are included in, or eligible for inclusion in, the National Register of Historic Places. These properties are not just old buildings or well-known historic sites, but places important in local, state, or national history. Facilities as diverse as bridges and water treatment plants may be considered historic. The National Register of Historic Places is a list of recognized historic properties. However, this list is not complete, and states may have additional properties with historic significance. Through the use of programmatic agreements, FEMA has delegated the identification and evaluation tasks to State Historic Preservation Offices in many states.

### ***Coastal Zone Management Act***

The Coastal Zone Management Act identifies and evaluates coastal resources recognized in the Act as requiring management or protection by the state. The program determines specific use and special geographic areas that are to be subject to the management program. If a proposed project is located in an area covered by a coastal zone management plan, it must comply with the requirements of that plan.

### ***Fish and Wildlife Coordination Act***

The Fish and Wildlife Coordination Act authorizes the U.S. Fish and Wildlife Service to administer programs through planning, development, maintenance and coordination of wildlife conservation and rehabilitation over the wildlife

resources of the state. If a proposed project will destroy wildlife habitat or modify a natural stream or body of water, this act requires an evaluation of that action on fish and wildlife.

### ***Wild and Scenic Rivers Act***

The Wild and Scenic Rivers Act was established by Congress to preserve selected rivers in their free-flowing condition in order to protect the water quality and fulfill other national conservation purposes. These rivers are considered protected much like a national wildlife refuge. Federal agencies may not fund projects that would have a direct and adverse effect on the values for which a river was designated. If a proposed project is located on a river designated as wild and scenic, it must be reviewed for compliance with this law.

### **Executive Orders**

In addition to the laws described above, several Executive Orders (EOs) issued by the President also affect PA Program projects. The EOs that most frequently affect the PA Program are described to follow.

**EO 11988.** Requires federal agencies to undertake certain responsibilities for floodplain management. FEMA's procedures for complying with this EO are outlined in 44 CFR Part 9.

**EO 11990.** Outlines the protection of wetlands and requires a planning process that considers alternatives and evaluates impacts to wetlands. The process for complying with this EO is similar to that for complying with EO 11988 and is outlined in 44 CFR Part 9.

**EO 12898.** Requires federal agencies to evaluate actions for disproportionately high and adverse effects on minority or low-income populations and to find ways to avoid or minimize these impacts where possible. Field personnel should identify any neighborhoods or communities with minority or low-income populations.

All of the issues discussed above must be considered in the debris management planning process.



## ***Funding Limitations***

### **Duplication of Benefits**

In accordance with the Stafford Act (Section 312), no entity will receive assistance for any loss for which financial assistance has already been received under any other program, or from insurance, or from any other source. Therefore the use of federal and/or state funds, insurance settlements, and other grants or cash donations granted for the same purpose constitutes a **duplication of benefits**.

### ***Other Federal Agencies***

If another federal agency has the authority to provide an applicant with assistance for debris removal operations, FEMA cannot provide funds for that project. When disaster assistance funds are available through the specific authority of other agencies of the federal government, applicants should pursue funding assistance offered through those agencies. In some cases FEMA may fund emergency work if the authorized agency decides not to provide assistance.

The Federal Highway Administration (FHWA), United States Army Corps of Engineers (USACE), National Resources Conservation Service (NRCS), Environmental Protection Agency (EPA), and Coast Guard may provide assistance to applicants for certain debris removal activities. Applicants must become aware of the agencies' roles, responsibilities and jurisdictions to ensure a duplication of benefits does not occur between other federal agencies and FEMA. Descriptions of other federal agencies and their programs are found in *Appendix B, FEMA Fact Sheet, RP 9580.202, Debris Removal Authorities of Federal Agencies*.

### ***Insurance Settlements***

Insurance policies that include coverage for debris removal activities are potentially a duplication of benefits. The applicant should contact its insurance provider for a statement of loss to determine the amount of insurance settlement related to debris removal. The insurance settlement will be reflected in the PA grant as a line-item credit.

Similarly, applicants should be aware that some residents within a declared disaster area may obtain funds for removing debris from their property through their homeowner insurance or through the Individual Assistance (IA) Program. Should residents receive funds through the IA Program or insurance proceeds

for the removal and disposal of debris from their properties, but also place debris at the curb, the applicant should make a concerted effort to collect the proportionate cost of the curbside removal from those residents in an effort to comply with Section 312 of the Stafford Act.

While FEMA understands that this could become an arduous task, applicants can put in place protocols to inform residents that receiving a benefit for the same purpose from the federal government or any other source is in violation of federal law.

When applicants receive reimbursements from residents for the cost of curbside collection, applicants are required to report the total amount of proceeds collected from those residents to FEMA. The federal share will be calculated after the insurance proceeds are reduced from the total of the curbside collection.

### ***Salvage Value***

Applicants may choose to recover materials from disaster debris for beneficial uses. Applicants may sell materials such as metals, woody debris, concrete, masonry brick or other types of debris to recyclers, to the construction or agricultural industry, or to energy generators. The salvage value for various recyclable or reusable debris materials depends on the regional recycling markets.

Applicants that sell disaster debris for a salvage value must offset the cost of the eligible debris removal work by the revenues received from the sale of the debris. Applicants must document and report to FEMA the revenues obtained through the sale of debris. Supplemental funding will be limited to the difference between the amount of revenue received and the cost for debris removal.

Applicants that contract for debris removal may allow the contractor to take possession of the recoverable debris materials. This type of agreement must take into account the salvage value and the applicant should negotiate a credit to reflect this value within the terms of the contract. The sale of the recoverable disaster debris materials should offset the cost of the contractor services.

Note: This document provides only a summary of the eligibility criteria for debris removal operations. For a more comprehensive understanding of the PA program, your organization can obtain additional information regarding FEMA PA policies, Fact Sheets, and guidance materials at [www.fema.gov](http://www.fema.gov).

## Chapter 2

### Costs

#### Chapter Highlights:

- ◆ Applicant's Resources (Force Account)
  - Labor
  - Equipment
  - Documentation
- ◆ Mutual Aid Agreement
- ◆ Contract Services
  - Eligibility and the 44 Code of Federal Regulations Part 13
    - Competition
    - Methods of Procurement
      - Small Purchase Procedures
      - Sealed Bids
      - Competitive Proposals
      - Noncompetitive Proposals
    - Types of Contracts
      - Lump Sum
      - Unit Price Contracts
      - Time and Material
    - Suggested Contracting Practices
    - Ineligible Contracts
    - Additional Contract Requirements

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### Applicant's Resources (Force Account)

An applicant's own labor and equipment is known as force account. These resources are eligible for grant funding when used to perform eligible work. It is important for the applicant's staff to document hours and equipment used while performing the eligible work. *Appendix C, Force Account Labor and Equipment Summary Record* is a form that is frequently used for this purpose. Applicants do

not have to use these exact forms. If their accounting systems can capture the same information contained within these forms, the applicants' accounting system information may be used for the PA grant consideration.

### **Labor**

The cost of straight-time salaries and benefits of an applicant's permanently employed personnel are not eligible in calculating the cost of eligible emergency work, which includes debris removal. FEMA-State Agreements will stipulate the ineligibility of straight-time salaries and benefits of an applicant's permanently employed personnel performing emergency work (categories A and B).

For debris removal work, only overtime labor costs are eligible for permanent employees, reassigned employees, and seasonal employees used during the season of anticipated employment. Straight-time and overtime will be determined in accordance with the applicant's pre-disaster policies, which should be applied consistently in both disaster and non-disaster situations. For example, one applicant may define labor exceeding eight hours a day as overtime, while another might define labor exceeding 40 hours a week as overtime.

Both straight-time and overtime labor costs are eligible for non-budgeted employees assigned specifically to perform emergency work. This includes temporary employees, essential employees called back from administrative leave, and permanent employees funded from an external source, such as grants.

The labor costs for employees sent home or told not to report due to emergency conditions are not eligible, because they are not performing eligible work related to the debris operation.

Further labor eligibility issues are addressed in *Appendix D, FEMA RP 9525.7, Labor Costs-Emergency Work*.

### **Equipment**

Reimbursement for force account equipment use will be only for the time the equipment is actually working. Standby and idle time are not eligible for PA grant funding.

Force account equipment may be reimbursed at an hourly rate. This hourly rate will include the operation, depreciation, maintenance and fuel for that particular piece of equipment. FEMA's equipment rate does not include the operator. The FEMA schedule of equipment rates is available online at <http://www.fema.gov/government/grant/pa/eqrates.shtm>.

Applicants that use rates established under state guidelines in their normal day-to-day operations may use state rates up to \$75 per hour upon PA program approval of the cost development methodology. Rates over \$75 per hour may be approved by FEMA on a case-by-case basis.

Applicants may use rates developed by a local government in their normal day-to-day operations. Reimbursement is based either on the local rates or the PA Program schedule, whichever is less. If the local rate is lower and the applicant certifies that the local rate does not reflect the actual cost, the PA Program rate may be used.

### **Documentation**

*Appendix C* provides a Labor and Equipment Summary Record that applicants may use or alter to fit their needs. The summary provides the minimum information required for the PA grant reimbursement consideration. The summary is not a required form. The applicant may use its own form or accounting summary if the same information is provided.

### **Mutual Aid Agreements**

Applicants may have agreements with other jurisdictions and agencies to provide debris removal services in the event of an emergency. The employees of the entity providing supplemental assistance are considered as extra hires or contract labor; therefore, both regular and overtime are eligible. FEMA will reimburse mutual aid costs provided that:

- The assistance is requested by the receiving applicant.
- The work performed is directly related to the disaster and is otherwise eligible for FEMA assistance.
- The entity that received the aid incurred a cost for that aid. (The providing jurisdiction or agency bills the receiving applicant for the service.)
- Provision of services under the agreement are not contingent upon declaration of a major disaster or emergency by FEMA.

- The providing entity can provide documentation of rates and payment for services.

FEMA Policy No. 9523.6 Mutual Aid Agreements for Public Assistance can be found online at [http://www.fema.gov/government/grant/pa/9523\\_6.shtm](http://www.fema.gov/government/grant/pa/9523_6.shtm).

## Contract Services

An applicant may hire a contractor to perform debris collection, monitoring, reduction, and recycling for the debris operations. The costs must be reasonable for the respective scope-of-work in order to be eligible for grant reimbursement. The procurement of the contract is subject to all provisions of 44 CFR Part 13.

*Appendix E, Policy No. 9580.4, Fact Sheet, Debris Operations Clarification of Emergency Contracting versus Emergency Work*, should be reviewed by the applicant and taken into consideration when soliciting contractors.

An applicant must consider costs, conflict of interest, and all local, state, and federal laws and regulations upon hiring an independent contractor to act as the applicant's agent for debris operations.

Supplemental disaster recovery funding is available for contracting work that is necessary to remove disaster debris. However, compliance with local procurement practices and the procurement regulations specified in 44 CFR 13.36 is essential to successfully receive funding from FEMA. The federal procurement regulations ensure that applicants procure contracts in a manner that will provide full and open competition. The regulations set conditions for record keeping and requirements that applicants maintain a written code of standards for conduct governing the performance of employees, officers or agents who select and award contracts.

Moreover, funding is limited to the scope-of-work necessary to remove debris that is an immediate threat to human life, health and safety and to eliminate immediate threats of damage to public or private property.

It is important that applicants secure contracts with reputable and qualified licensed contractors. Applicants should conduct reference checks on a contractor's history of performance with the state contractor's licensing board and with the contractor's previous clients before awarding contracts. *Appendix F is FEMA Fact Sheet RP 9580.201, Debris Removal Applicant's Contracting Checklist.*

## 44 CFR 13.36

FEMA eligibility determinations, in terms of contracted services, are based on 44 CFR 13.36. This section explains federal procurement procedures and how they relate to the applicant's contracting procedures and operations. The full text of 44 CFR Part 13 is available online at

[http://www.access.gpo.gov/nara/cfr/waisidx\\_06/44cfr13\\_06.html](http://www.access.gpo.gov/nara/cfr/waisidx_06/44cfr13_06.html).

Contracts must be of reasonable cost, generally must be competitively bid, and must comply with federal, state, and local procurement standards. FEMA will reimburse only fair and reasonable costs regardless of the contract an applicant enters.

### Competition

Pursuant to 44 CFR 13.36(c)(1), applicants may not restrict the bidding in order to disqualify a population of bidders. Some of the situations considered to be restrictive of competition include, but are not limited to:

- Placing unreasonable requirements on firms in order for them to qualify to do business;
- Requiring unnecessary experience and excessive bonding;
- Noncompetitive pricing practices between firms or between affiliated companies;
- Noncompetitive awards to consultants that are on retainer contracts;
- Organizational conflicts of interest;
- Specifying only a "brand name" product instead of allowing "an equal" product to be offered and describing the performance of other relevant requirements of the procurement; and,
- Any arbitrary action in the procurement process.

Applicants must keep pre-qualified lists of persons, firms, or products current in order to ensure free and open competition during the bidding process, in accordance with 44 CFR 13.36(c)(4):

*"Grantees and sub-grantees will ensure that all pre-qualified lists of persons, firms, or products which are used in acquiring goods and services are current and include enough qualified sources to ensure maximum open and free competition. Also, grantees and sub-grantees will not preclude potential bidders from qualifying during the solicitation period."*

## Methods of Procurement

An applicant may request its procurement system be reviewed by FEMA to determine whether its system meets the standards set forth in 44 CFR 13.36.

FEMA finds four methods of procurement acceptable. Each is described below.

**Small Purchase Procedures.** Small purchase procurement is an informal method for securing services or supplies that do not cost more than \$100,000 by obtaining several price quotes from different sources.

**Sealed Bids.** Sealed bid procurement is a formal method where bids are publicly advertised and solicited, and the contract is awarded to the responsible bidder whose proposal is the lowest in price. This method is the preferred method for procuring construction contracts.

**Competitive Proposals.** Competitive procurement is a method similar to sealed bid procurement in which contracts are awarded on the basis of contractor qualifications instead of on price. This method is often used for procuring architectural or engineering professional services. In addition, this method normally involves more than one source submitting an offer and is used when conditions are not appropriate for sealed bids.

**Noncompetitive Proposals.** Noncompetitive procurement is a method whereby a proposal is received from only one source. Noncompetitive proposals should be used only when the award of a contract is not feasible under small purchase procedures, sealed bids, or competitive proposals, and one of the following circumstances applies:

- The item is available only from a single source;
- There is an emergency requirement that will not permit a delay; or
- Solicitation from a number of sources has been attempted, and competition is determined to be inadequate.

FEMA strongly discourages applicants to use a noncompetitive contract for debris removal operations. A contract may be regarded as noncompetitive if the applicant has only one responsive bidder. In this case the applicant will be required to comply with 44 CFR 13.36(f), which states in part:

*“....A cost analysis will be necessary when adequate price competition is lacking, and for sole source procurements, including contract*



*modifications or change orders, unless price reasonableness can be established on the basis of a catalog or market price of a commercial product sold in substantial quantities to the general public or based on prices set by law or regulation. A price analysis will be used in all other instances to determine the reasonableness of the proposed contract price."*

The applicants are also required by 44 CFR 13.36(f)(2) to negotiate a fair and reasonable price for each contract in which there is no price competition and in all cases where cost analysis is performed. Consideration shall be given to the complexity of the work performed, the risk borne to the contractor, the contractor's investment, the amount of subcontracting, the quality of the contractor's record of past performance, and industry profit rates in the surrounding geographical area for similar work.

### Types of Contracts

FEMA provides reimbursement for four types of contracts:

**Lump sum** contracts for work within a prescribed boundary with a clearly defined scope and a total price;

**Unit price contracts** for work done on an item-by-item basis with cost determined per unit;

**Cost plus fixed fee** contracts, which are either lump sum or unit price contracts with a fixed contractor fee added into the price.

**Time and material contracts** are those in which the contractor bills the applicant for labor, equipment, material, and overhead. These contracts should be avoided, but may be allowed for work that is necessary immediately after the disaster has occurred when a clear scope-of-work cannot be developed.

**Typically, FEMA will reimburse for only 70 hours of a time and material contract.** If a time and material contract is awarded, the applicants must:

- Monitor and document contractor expenses;
- Have a cost ceiling or "not to exceed" provision in the contract; and
- Contact the state to ensure proper guidelines are followed.

After 70 hours of work, the applicant should have ample information about the scope-of-work necessary to complete debris collection and disposal, and also have a basis for estimating a reasonable cost for the contract work to effectively

solicit a lump sum or a unit price contract. Though for some types of debris contracts, time and materials contracts may be the most cost-effective and the most well-suited to the type of work (e.g., removal of hazardous tree limbs). Applicants should work closely with the state and FEMA when awarding time and material contracts to ensure eligibility requirements are met.

### **Suggested Contracting Practices**

The contract scope of work should reference “eligible work,” “work eligible under FEMA’s Public Assistance regulations, policies, and guidance,” or other similar reference. Contracts should also affirmatively state the applicant’s obligation to pay the contractor for eligible work performed.

FEMA does not favor “piggyback contracts.” These contracts have been used on rare occasions by applicants who, for various reasons, have had disaster-related work performed by another jurisdiction’s contractor. The variables associated with the scope of work and costs generally make this an option to be avoided. In addition, the competitive procurement requirements of 44 CFR Part 13 are also a concern. If FEMA encounters a request for reimbursement of costs derived from such a contract, the reimbursable costs for eligible work will be based on reasonableness.

### **Ineligible Contracts**

In accordance with 44 CFR 13.36(f)(4), **cost plus percentage of cost contracts** are ineligible for FEMA reimbursement.

Contracts with debarred contractors are not eligible for grant reimbursement.

### **Additional Contract Requirements**

All contracts in excess of \$10,000 must contain a termination for cause and for convenience by the applicant, including the manner by which it will be effected and the basis for settlement, according to 44 CFR 13.36(i)(2).

For contracts over \$100,000 the applicant must have the following minimum bonding requirements:

- A bid guarantee from each bidder equivalent to five percent of the bid price.
- A performance bond on the part of the contractor for 100 percent of the contract price.

- A payment bond on the part of the contractor for 100 percent of the contract price.

In accordance with 44 CFR 13.36(b)(8), “Grantees and subgrantees will make awards only to responsible contractors possessing the ability to perform successfully under the terms and conditions of a proposed procurement. Consideration will be given to such matters as contractor integrity, compliance with public policy, record of past performance, and financial and technical resources.” Documentation requirements are specified in 44 CFR 13.36(b)(9) and include, but are not limited to, rationale for the procurement method, contract type, contractor selection or rejection, and the basis for contract price.

For additional contracting information, refer to *Appendix F, FEMA Fact Sheet, RP 9580.201, Debris Removal, Applicant’s Contracting Checklist*.

## Chapter 3

### Debris Removal from Public Property

#### Chapter Highlights

- ◆ Eligible Debris Removal
  - ◆ Ineligible Debris Removal
  - ◆ Debris Clearance and Removal Operations
  - ◆ Field Eligibility Determinations
    - Vegetative Debris Eligibility
      - Hazardous Trees, includes limb removal (hangars)
      - Hazardous Tree Stumps
    - Construction and Demolition Debris
    - Hazardous Waste
    - White Goods
    - Soil, Mud, and Sand
    - Vehicles and Vessels
    - Putrescent Debris
    - Garbage
  - ◆ Monitoring Debris Removal Contracts
  - ◆ Disposal
- 

This chapter discusses debris operations on public property and public rights-of-way. Applicants should document locations, conditions, and special circumstances of debris prior to removal. This chapter includes preferred documentation information and requirements. Proper documentation enables an applicant to fully account for costs incurred in the event that federal disaster assistance is made available.

## Eligible Debris Removal

In order for the work to be eligible for PA grants, debris removal must meet the following:

- The debris is located within a designated disaster area on an eligible applicant's improved property or rights-of-way;
- The debris removal is the legal responsibility of the applicant; and
- The debris was generated by the major disaster event.

## Ineligible Debris Removal

The following are *not eligible* for FEMA assistance through the PA Program:

- Any debris removal from an eligible applicant's unimproved property or undeveloped land; or
- Any debris removal from a facility which is not eligible for funding through the PA Program, such as a PNP cemetery or PNP golf course.

## Debris Clearance and Removal Operations

Debris removal operations generally occur in two phases: **Initial Clearance necessary to eliminate life and safety threats** and **Debris Removal as a means to recovery**. Whether the work was performed by an applicant's own staff or by contractors, documentation will be necessary for eligibility considerations.

Usually, a local government's initial response phase of the debris operations begins during the disaster event. Public works crews may be activated to keep vegetative debris cleared, usually cut-and-tossed, from emergency access roads or firefighters may secure a hazardous waste spill. The purpose is to eliminate an immediate threat to lives, public health and safety.

The transition period from the initial response phase to recovery depends on the magnitude of disaster impact. Typically, the recovery phase begins after the emergency access routes are cleared, when the police, firefighters and other first responders are able to pass through without delay.

Often residents begin clearing disaster debris from their properties and placing it along the public rights-of-way. If the property owners move the disaster-related debris to a public right-of-way, the local government may be reimbursed for curbside pickup and disposal for a limited period of time.

If an applicant does *not* have the legal responsibility to maintain a right-of-way, then debris removal from that right-of-way is not eligible for reimbursement.

## Field Eligibility Determinations

In order to assist applicants and staff, FEMA has established specific guidance for common debris situations. This section addresses the most common eligibility issues for various types of debris material and recommends documentation for grant consideration.

***Only FEMA has the authority to make eligibility determinations for PA grant funding; contractors cannot make eligibility determinations. Information on eligibility can be found in the Public Assistance Policy Digest, the Public Assistance Applicant Handbook and the Public Assistance Guide.***

### **Vegetative Debris Eligibility**

**Vegetative debris** consists of whole trees, tree stumps, tree branches, tree trunks, and other leafy material. Depending on the size of the debris, the collection of vegetative debris may require the use of flat bed trucks, dump trucks, and grapple loaders.



Typical vegetative debris at public right-of-way

Most vegetative debris consists of large piles of tree limbs and branches that are piled beside the public rights-of-way by the residents. The collection of this type of debris is eligible for reimbursement if it is within the public right-of-way and

collected by an eligible applicant. Applicants normally will limit the number of times the debris is collected; for instance, the applicant may choose to make two passes throughout the jurisdiction before resuming its normal collection activities. The applicant should discuss with FEMA the number of passes that may be appropriate.

Vegetative debris is bulky and consumes a significant volume of landfill space if buried. To minimize the use of landfill space, it is prudent to reduce the volume of vegetative debris before burying. Vegetative debris can be reduced by as much as 75 percent of its volume by mulching or grinding and as much as 90 percent of its volume through burning technologies. Costs to reduce vegetative debris are eligible for grant funding if found to be reasonable.

A hazardous tree or stump may be collected individually, while downed or fallen debris is collected at curbside or at a designated collection center. Trees and stump collection prices are typically based on the size of the tree or stump and charged by unit. Other fallen or downed material is usually billed by weight (tons) or volume (cubic yards).

Determining eligibility for hazardous trees and stumps is challenging. FEMA has established criteria to assist in making these eligibility determinations, using objective information that can be collected in the field.

### **Hazardous Trees**

Removing a tree that poses an immediate threat may be eligible for PA grant assistance. An eligibility determination may be made using the following criteria.

A tree is considered “hazardous” if its condition was caused by the disaster; if it is an immediate threat to lives, public health and safety, or improved property; and if it is six inches in diameter or greater, when measured two feet from the ground; **and one or more of the following criteria are met:**

- It has more than 50 percent of the crown damaged or destroyed.
- It has a split trunk or broken branches that expose the heartwood.
- It has fallen or been uprooted within a public use area.
- It is leaning at an angle greater than 30 degrees.

Trees determined by FEMA and the applicant to be hazardous and that have **less than 50 percent of the root-ball exposed** should be cut flush at the ground level. The cut portion of the tree will be included with regular vegetative debris. Stump grinding is not eligible work.

The eligible scope-of-work for a hazardous tree may include removing the leaning portion and cutting the stump to ground level. An example of an ineligible costing method for such work would be removing the tree and stump for two separate unit costs.

The PA grant will reimburse buttressing if less costly than removal and disposal. Buttressing is an emergency protective measure if it eliminates an immediate threat to lives, public health and safety, or improved property.

#### ***Hazardous Limb Removal (Hangers)***

Removing hanging limbs may be eligible for grant reimbursement. Limbs must be:

- Greater than 2" in diameter
- Still hanging in a tree and threatening a public-use area (trails, sidewalks, golf cart paths)
- Located on improved public property

Only the minimum amount of work necessary to remove the hazard is eligible. Pruning, maintenance trimming and landscaping are not eligible. Work should be executed in an efficient manner as well. For example, all hazardous limbs in a tree should be cut at the same time, not in passes for particular sizes.

An eligible scope-of-work may be to cut the branch at the closest main branch junction. Removing the entire branch back to the trunk may not be eligible.

Documentation required for reimbursement consideration:

- Describe the immediate threat, (e.g., photos of hanging limbs or leaning trees).
- The scope of work must be defined by the applicant and FEMA.
- Specify the improved public property location by recording the nearest building address and/or GPS location.
- Denote date, labor (force account or contractor), equipment used to perform the work.



**Hazardous Tree Stumps**

A stump may be determined to be hazardous and eligible for reimbursement as a per-unit cost for stump removal if it meets all of the following criteria:

- It has 50 percent or more of the root-ball exposed (less than 50 percent should be flush cut);
- It is on improved public property or public right-of-way; and
- It poses an immediate threat to life, public health and safety.

The reasonable cost for the stump removal is based on the diameter of the stump measured two feet from the ground.

Stumps measuring **24 inches in diameter or less** do not require special equipment; therefore, reimbursement will be based on the reasonable unit cost per cubic yard, using the Stump Conversion Table found in *Appendix G, FEMA RP 9523.11, Hazardous Stump Extraction and Removal Eligibility*. The unit price for stump removal includes the extraction, transport, and disposal of the stump as well as filling the cavity that remains.

FEMA may reimburse a reasonable cost to remove, transport, dispose of and fill the hole from a tree or stump of **more than 24 inches in diameter** if:

- The applicant and state agree the tree or stump is hazardous according to the definition above;
- FEMA approved the removal in advance; and
- A Hazardous Stump Worksheet is completed and submitted for FEMA's approval.

FEMA will reimburse the applicants at the unit cost rate (usually cubic yards) for normal debris removal for all stumps, **regardless of size, placed on the public rights-of-way by others** (i.e., contractors did not extract them from public property or property of eligible PNP organization). In such instances, applicants do not incur additional costs to remove these stumps; the same equipment used to pick up vegetative debris can be used to pick up these stumps.

If the applicant incurs additional costs for removal of a stump measuring more than 24 inches in diameter that is placed on the right-of-way, a Hazardous Stump Worksheet, in *Appendix G*, can be submitted for reimbursement consideration.

If an uprooted stump must be removed **prior to FEMA's approval**, the applicant must submit the following information for reimbursement consideration:

- Photographs that establish the location on public property;
- Specifics of the threat;
- Diameter of stump two feet from the ground; and
- Quantity of material needed to fill the resultant hole.

### ***Construction and Demolition Debris***

For a federally declared disaster, construction and demolition debris is limited to rubble resulting from the disaster-caused destruction of buildings and other structures. Construction and demolition debris generated by a disaster includes damaged components of buildings and structures, such as lumber and wood, gypsum wallboard, glass, metal, roofing material, tile, carpeting and floor coverings, window coverings, plastic pipe, concrete, fully cured asphalt, heating, ventilating, and air conditioning systems and their components, light fixtures, small consumer appliances, equipment, furnishings, and fixtures.

Certain types of construction and demolition debris are highly reusable or recyclable. To conserve landfill space, it is prudent to separate materials for reuse or recycling.



Construction and Demolition Debris

Some construction and demolition debris may be hazardous, such as asbestos roofing and floor tile, and lead pipes. Grant eligibility is subject to all other federal laws and regulations, including environmental and hazardous waste

ordinances. Therefore documentation of the debris origin, records of any processing (reduction or recycling), and/or the final disposition will be required for grant reimbursement consideration.

Typically, debris from construction by-products generated by repairs or rebuilding is covered by insurance policies or in contractors overall cost for reconstruction projects; therefore, it is not eligible for PA grant funding.

### ***Hazardous Wastes***

Hazardous wastes consist of materials that are ignitable, reactive, toxic or corrosive as defined in the Resource Conservation and Recovery Act (RCRA – pronounced “rick-rah”). Commercial, industrial, manufacturing and agricultural businesses are primary generators of hazardous wastes. Certified hazardous waste technicians should handle, capture, recycle, reuse, and dispose of hazardous waste. The planning staff will need to implement the State and local environmental requirements for handling all hazardous waste.



Hazardous Waste

**Household Hazardous Waste (HHW)** Examples of common household hazardous waste items include leftover paints, cleaners, oils, batteries, pesticides, etc. Fluorescent light bulbs, thermometers or other mercury containing devices are also considered household hazardous wastes.

**Electronic Waste Collection** or E-Waste components are electronic items that contain hazardous materials, specifically cathode ray tubes. These items include computer monitors and televisions.

### **White Goods**

“White goods” are defined as discarded household appliances, such as refrigerators, freezers, air conditioners, heat pumps, ovens, ranges, washing machines, clothes dryers, and water heaters.



White goods stockpiled for processing

Many white goods contain ozone-depleting refrigerants, mercury or compressor oils. The federal Clean Air Act forbids the release of refrigerants into the atmosphere because it contributes to the depletion of the ozone layer. To avoid the refrigerants from venting to the atmosphere, the Clean Air Act requires that certified technicians extract refrigerants from white goods before they are recycled or disposed. Some states also require certified technicians to extract compressor oils before disposing or recycling white goods.

Applicants should follow all local ordinances, state and federal laws concerning the final disposition of ozone depleting refrigerants, mercury or oils. Documentation of proper disposal may be required for grant consideration.

### **Soil, Mud, and Sand**

Floods, landslides, and storm surges will often bring soil, mud, and sand onto improved public property and public rights-of-way. Applicant owned infrastructure that is commonly impacted by this type of debris includes streets, sidewalks, storm and sanitary sewers, water treatment facilities, drainage canals and basins, parks, and swimming pools. Natural streams and unimproved property are not considered eligible facilities.

The removal of this type of debris from improved public property and public rights-of-way is eligible for reimbursement. For instance, removing landslide

material from a roadway, clearing mud and soil from sidewalks and streets, or clearing out the mud from the sewer lines may be eligible for PA grant funding, if it is the legal responsibility of an eligible applicant.

The amount of the PA grant funding for removal of soil, mud, and sand, is based on the quantity that was deposited due to the event. In order to determine the disaster-related debris quantities, the applicant will be asked to provide regularly scheduled maintenance reports that indicate the pre-disaster soil, mud, and sand levels. Maintenance reports are commonly requested for sewers, water treatment facilities, and drainage channels.

The owner of a facility is responsible for determining the extent of damage incurred due to the disaster. The PA grant does not provide funds for random surveys to look for damage, such as TV inspection of sewer lines. If disaster-related damage is evident, however, the PA grant may pay for inspections to determine the extent of the damage and method of repair.

Drainage channels and canals may be an element of a flood control work or water control facility. These types of facilities are often under the jurisdiction of the **U.S. Army Corps of Engineers (USACE)** or the **Natural Resources Conservation Service (NRCS)**. For additional information regarding USACE and NRCS programs refer to *Appendix H, Flood Control Works, Eligibility for Federal Assistance in Presidentially Declared Disasters*. If a flood-control work or water control facility falls under another federal jurisdiction it is generally not eligible for PA grant funding because it is not the legal responsibility of the applicant to maintain or repair.

### ***Vehicles and Vessels***

In order for removal of vehicles and vessels to be eligible the applicant must demonstrate that:

- The vehicle or vessel presents a hazard or immediate threat that blocks ingress/egress in a public use area;
- The vehicle or vessel is abandoned. (Example: vehicle or vessel is not on the owner's property and the ownership is undetermined);
- Applicants followed the local ordinances and state law by securing ownership; and
- Applicants verified chain of custody, transport, and disposal of the vehicle or vessel.

All supporting documentation relating to removal of abandoned vehicles and vessels must be submitted to FEMA for reimbursement consideration. For navigational vessels, applicants must follow their abatement hazard laws, coordinate with the requirements of the marine and harbor patrol agencies, and comply with local laws governing navigational vessels.

It is important for the applicant to follow its normal written procedures regardless of the circumstances. Any duplication of benefits issues will be addressed during FEMA's closeout evaluation.

### ***Putrescent Debris***

Putrescent debris is any debris that will decompose or rot. Examples include animal carcasses, marine wastes, and other fleshy organic matter. Decaying marine animals or other wildlife need special handling during collection and disposal of the carcasses and the costs may be eligible. The United States Department of Agriculture (USDA) through NRCS has developed specific guidelines for disposing of dead animals. The disposal of dead animal waste must be in compliance with those federal and state requirements to be eligible for reimbursement.

In general, household food wastes can be collected through normal municipal waste collection methods and are not eligible for funding.

### ***Garbage***

It is important to note that disasters also bring about a surge of additional waste such as plastic and glass containers, cardboard and cans. These materials are a result of the influx of emergency relief supplies and foods. It may become necessary to augment the existing municipal waste and recycling collection services to collect extra wastes that will impact the normal municipal waste stream.

## **Monitoring Debris Removal Operations**

The applicant's efforts in overseeing and documenting the debris removal operations are called monitoring. If a disaster is eligible for the PA Grant program, the documentation generated during the monitoring operations can be submitted for reimbursement considerations. Eligible PA applicants are required to monitor debris removal operations and document eligible quantities and

reasonable expenses to ensure that the work is eligible for PA grant reimbursement. Failure to do so properly may jeopardize this funding.

In federally declared disasters, FEMA personnel will periodically validate the applicant's monitoring efforts to ensure eligible debris is being removed and processed efficiently. **Debris monitoring is primarily the responsibility of the applicant.** Guidance in monitoring debris removal operations is offered in *Appendix I, FEMA Fact Sheet RP 9580.203, Debris Monitoring*.

## Disposal

Landfill-tipping fees usually include fixed and variable costs along with some special taxes or fees by the jurisdiction. Examples of variable costs include costs for labor, supplies, maintenance, utilities, and gas or recovery systems. Fixed costs generally include equipment, construction, permits, landfill closure, post closure, and amortized costs for ancillary landfill building structures.

Eligible landfill costs are limited to the fixed and variable costs that are directly related to landfill operations.

Jurisdictions may incorporate special fees or taxes in the landfill tipping fee to fund government services or public infrastructure. When tipping fees include such costs, those costs are not eligible for disaster assistance funding.

## **Chapter 4**

### **Demolition and Debris Removal from Private Property**

#### **Chapter Highlights**

- ◆ General Eligibility Criteria for PPDR
  - Public Interest
  - Approval for FEMA Assistance
    - Immediate Threat Determination
    - Documentation of Legal Responsibility
      - Authorization for Debris Removal from Private Property
    - Indemnification
  - Private Roads
  - Commercial Property
- ◆ Types of Eligible PPDR Work
- ◆ Required Documentation for PPDR
  - Right-of-entry
  - Photos
  - PPDR Assessment
  - Environmental and Historic Review
- ◆ General Eligibility of Demolition of Private Structures
  - Demolition of Commercial Structures
- ◆ Types of Eligible Demolition Costs
- ◆ Required Documentation for Demolition of Private Structures
  - Right-of-entry
  - Photos
  - Structural Assessment/Certification of Unsafe Structure
  - Notice of Demolition
  - Environmental and Historic Review
- ◆ Additional Considerations
  - Duplication of Benefits



## General Eligibility Criteria for PPDR

Debris removal from private property is generally not eligible for reimbursement through the PA Program because it is the responsibility of the individual property owner. If the property owners move the disaster-related debris to a public right-of-way, applicants may be reimbursed for curbside pickup and disposal for a limited period of time.

Large-scale disasters, however, may deposit vast quantities of debris on private property over a large area resulting in widespread immediate health and safety threats to the public-at-large. In these cases, the State or local government may need to enter private property to remove debris considered to be an immediate threat to life, public health, and safety. In these situations, debris removal from private property may be considered to be in the public interest and thus may be eligible for Public Assistance reimbursement.

### ***Public Interest***

In order for private property debris removal (PPDR) operations to be eligible for PA grants, the debris removal work must be in the “public interest.” “Public interest” is defined as being necessary to:

- Eliminate immediate threats to life, public health, and safety; or
- Eliminate immediate threats of significant damage to improved public or private property; or
- Ensure economic recovery of the affected community to the benefit of the community-at-large.

### ***Approval for FEMA Assistance***

FEMA will work with states affected by a disaster to designate those areas where the debris is so widespread that removal of the debris from private property is in the “public interest” under 44 CFR § 206.224, and thus is eligible for FEMA Public Assistance reimbursement on a case-by-case basis.

Any State or local government that intends to seek reimbursement to remove debris from private property must, prior to commencement of work, submit a written request to the Federal Coordinating Officer (FCO) seeking approval for reimbursement. The written request attachments must include the following provisions:

### **Immediate Threat Determination**

The State or local government that requests assistance must provide documentation for the basis of a determination by the relevant State, county or municipal government's Department of Health or equivalent public health authority that disaster-generated debris on private property constitutes an immediate threat to life, public health, and safety.

According to 44 CFR § 206.221, an immediate threat is the threat of additional damage or destruction from an event which can reasonably be expected to occur within five years. In terms of debris removal, this may include a debris-related condition that is a result of the declared disaster and is detrimental to public health and safety and/or improved property.

### **Documentation of Legal Responsibility**

The applicant must provide a detailed explanation documenting the State or local government's legal responsibility, duty and authority to enter private property to remove debris, and confirmation that all legal processes and permission (e.g., right-of-entry) requirements for such action have been satisfied.

The eligible applicant requesting assistance must demonstrate the legal basis as established by law, ordinance, or code upon which it exercised or intends to exercise its responsibility following a major disaster to protect its citizens from immediate threats. Codes and ordinances must be germane to the condition representing an immediate threat to life, public health, and safety, and not merely define the applicant's uniform level of services. Solid waste ordinances are considered part of an applicant's uniform level of services.

An applicant's condemnation of property and/or obtaining signed rights-of-entry and hold harmless agreements from property owners do not demonstrate the applicant's legal responsibility for the purpose of the Public Assistance Program. In addition, an applicant's determination of its legal responsibility for the removal of debris from private property must not be contingent upon reimbursement of the costs by FEMA.

FEMA understands that disaster conditions may not warrant a local government to apply its normal law process precisely. In these cases, FEMA will evaluate the applicant's demonstration of legal authority and responsibility to remove debris from private property on a case-by-case basis.

States, counties and municipalities ordinarily rely on condemnation and nuisance abatement authorities and obtain a right-of-entry from private property owners prior to the commencement of debris removal work. There may be circumstances, however, where the State or local government determines that ordinary condemnation and nuisance abatement procedures and the obtaining of a right-of-entry from each property owner are too time consuming to address an immediate public health and safety threat, or that existing codes and ordinances do not adequately address legal responsibility. For these instances, the FCO will also require a written opinion from the relevant State's Office of the Attorney General confirming the legal basis under State constitutional and statutory authority for the State, county and municipal governments to enter private property to perform debris removal. In these cases, applicants do not have to precisely follow their nuisance abatement—or other ordinances—that usually require placement of liens on the properties.

If local governments cannot obtain rights-of-entry to properties because owners cannot be located, the local governments can obtain an opinion from the relevant State's Office of the Attorney General supporting local government authority to remove debris from private property.

#### ***Authorization for Debris Removal from Private Property***

The applicant must provide confirmation that a legally authorized official of the requesting applicant has ordered the exercise of public emergency powers or other appropriate authority to enter onto private property in order to remove/reduce threats to life, public health, and safety threat via debris removal.

#### **Indemnification**

The requesting applicant must indemnify the Federal government and its employees, agents, and contractors from any claims arising from the removal of debris from private property.

The FCO will approve or disapprove in writing each written request for private property debris removal after receiving the request from the State or local government. After receiving approval from the FCO, the State or local government may begin identified PPDR activities and the application process for supplemental assistance through the Public Assistance program.

### ***Private Roads***

A private road is any non-public road for which a subdivision of the State is not legally responsible to maintain. Private roads include roads owned and maintained by homeowners associations, including gated communities, and roads for which no entity has claimed responsibility. Local police, fire and emergency medical entities may use these roads to provide services to the community. Disaster-generated debris on private roads, including debris originating from private property and placed at the curb of public or private rights-of-way is eligible for PA grant funding, provided that the removal of the debris has become the legal responsibility of an eligible applicant on the basis of removing an immediate threat to life, public health, and safety.

### ***Commercial Property***

PA grant-funded debris removal from private property generally applies to areas of mixed use, i.e., business and residential properties in close proximity to one another. Commercial properties, such as industrial parks, are not eligible for PA grant funding. It is assumed and expected that these commercial developments have retained insurance that can and will cover the cost of debris removal. The removal of debris from private commercial property by a state or local government may be eligible for FEMA reimbursement when such removal is in the public interest.

In cases of commercial property, the Federal Coordinating Officer (FCO) should determine if debris removal is in the public interest. The following factors will be considered in determining if there is an immediate threat to health and safety:

- There is a substantial risk of human remains intermixed with the debris,
- It is impossible to delineate the residential and commercial property debris due to the close proximity of the properties, and
- The area in question is too widespread and overwhelming that a fence cannot be used to reduce the threat.

These factors will be considered in relation to the economic recovery of the community-at-large:

- Specific financial reasons why the businesses cannot remove their own debris,

- The business will have the financial capability to reopen if and only if the government removes the debris, and
- Restoration of the business will benefit the economic recovery of the community-at-large.

## **Types of Eligible PPDR Work**

**Eligible** debris removal work from private property includes removal of:

- Large piles of disaster-generated debris in the living, recreational, and working areas of properties in urban, suburban, and rural areas, including large lots. Debris removal is not eligible in those areas used for crops and livestock or unused areas.
- Disaster-generated debris obstructing primary ingress and egress routes to improved property.
- Disaster-damaged limbs and leaning trees in danger of falling on improved property or primary ingress or egress routes.
- Debris created by the demolition and removal of damaged interior and exterior materials from improved property.

**Ineligible** debris removal work on private property includes the removal of:

- Debris from vacant lots, forests, heavily wooded areas, unimproved property, and unused areas. Any area surrounding the private property that is not maintained is excluded from eligible PPDR work unless it poses an immediate threat to improved property.
- Debris on agricultural lands used for crops or livestock.
- Concrete slabs or foundations-on-grade.
- Reconstruction debris consisting of materials used in the reconstruction of disaster-damaged improved property.

## **Required Documentation for PPDR**

If PPDR is authorized and considered for PA grant funding, it is extremely important that the applicant adhere to all local ordinances and state laws.

The following documents will be required for FEMA's eligibility review of costs associated with all PPDR work.

1. A **Right-of-Entry Form** will include the “hold harmless agreement” applicable to the project’s scope-of-work. A hold harmless agreement documents the property owner’s promise that he/she will not bring legal action against the applicant or the federal government if there are damages or harm done to the property. FEMA’s Office of Chief Counsel (OCC) should review the Right-of-Entry Form and the hold harmless agreement. PA staff will provide more detailed review to include verification that the owner signed the form, the address on the Right-of-Entry Form matches the supporting documentation, and the insurance information (policy number) is present, if applicable.
2. **Photos** are strongly encouraged to show the condition of the property prior to the beginning of the work. Generally, this is one- or two-labeled pictures that confirm the address and identified scope-of-work on the property.
3. A **PPDR Assessment** form is a property-specific assessment which establishes the scope of eligible work. This may be a map which serves as a guide indicating the location of the eligible items of work that present an immediate threat relative to a structure or other frames of reference near improved property. These maps may incorporate symbols and a legend to identify structures, property lines, and eligible items of work. This assessment may also be a work order or may be covered in the Right-of-Entry Form, as long as the scope of work can be clearly identified.
4. **Documentation of Environmental and Historic Review.** Debris removal work from private property must satisfy compliance review requirements as established by 44 CFR Parts 9 and 10 and all other applicable Federal environmental and historic preservation requirements.

## **General Eligibility Criteria for the Demolition of Private Structures**

Section 403(a)(3)(E) of the Stafford Act provides FEMA authority to fund the demolition of unsafe structures on public and private lands which endanger the public in order to save lives and protect property or public health and safety.

An unsafe structure is a structure found to be dangerous to the life, health, property or safety of the public or the occupants of the structure because such structure is so damaged or structurally unsafe as a direct result of the declared disaster that partial or complete collapse is imminent.

The demolition of unsafe structures owned by eligible public and private nonprofit (PNP) applicants may be eligible for Public Assistance grant funding under Section 406 of the Stafford Act, which funds the repair, restoration, reconstruction, or replacement of eligible facilities.

Demolition of privately owned structures and the removal of demolition debris may be eligible for reimbursement when the following conditions are met:

1. The structures were damaged and made unsafe by the declared disaster.
2. The State or local government certifies that the structures are determined to be unsafe and pose an immediate threat to the public. This certification must be based on local building codes or ordinances germane to the condition representing an immediate threat to life, public health, and safety. This certification may be based on structural assessments conducted by a certified building inspector. FEMA must concur that demolition and the removal of demolition debris are appropriate remedial actions necessary to remove/reduce the immediate threats to the public.
3. The State or local government provides a detailed explanation documenting the applicant's legal responsibility, duty, and responsibility to enter private property to demolish an unsafe structure, and confirmation that all legal processes and permission requirements (e.g., rights-of-entry) for such action have been satisfied.
  - a. The eligible applicant requesting assistance must demonstrate the legal basis as established by law, ordinance, or code upon which it exercised or intends to exercise its responsibility following a major disaster to protect its residents from immediate threats. Codes and ordinances must be germane to the condition representing an immediate threat to life, public health, and safety, and not merely define the local government's uniform level of services.
  - b. Obtaining signed rights-of-entry and hold harmless agreements from property owners do not demonstrate the applicant's legal responsibility for the purpose of the Public Assistance Program. In addition, an applicant's determination of its legal responsibility for the demolition of privately-owned structures and the removal of demolition debris from private property must not be contingent upon reimbursement of the costs by FEMA.

c. States, counties and municipalities ordinarily rely on condemnation and nuisance abatement authorities and obtain a right-of-entry from private property owners prior to the commencement of demolition and demolition debris removal work on private property. There may be circumstances, however, where the State or local government determines that ordinary condemnation and nuisance abatement procedures and the obtaining of a right-of-entry from each property owner are too time-consuming to address an immediate public health and safety threat, or that existing codes and ordinances do not properly provide for legal responsibility. The Federal Coordinating Officer will also require a written opinion from the State's Office of the Attorney General confirming the legal basis under State constitutional and statutory authority for the State, county and municipal governments to enter private property to perform demolition and remove demolition debris. In these cases, applicants do not have to precisely follow their condemnation or nuisance abatement—or other ordinances—that usually require placement of liens on the properties.

d. If local governments cannot obtain rights-of-entry to properties because owners cannot be located, the local governments can obtain an opinion from the State's Office of the Attorney General supporting local government authority to demolish unsafe structures and remove demolition debris from private property.

4. The State or local government provides confirmation that a legally authorized official has ordered the exercise of public emergency powers or other appropriate authority to enter onto private property in order to remove/reduce threats to life, public health, and safety threat via demolition of unsafe structures and demolition debris removal.

5. The State or local government indemnifies the Federal government and its employees, agents, and contractors from any claims arising from the demolition of private structures and removal of demolition debris from private property.

6. The work is completed within the completion deadlines outlined in 44 CFR §206.204 for emergency work.

Structures condemned as safety hazards before the disaster are not eligible for demolition and resulting debris removal under Public Assistance grant authority. Individuals and private organizations (except for eligible PNPs) will not be reimbursed for demolition activities on their own properties.



## ***Demolition of Commercial Structures***

The demolition of commercial structures is generally ineligible for Public Assistance grant funding. It is assumed and expected that these commercial enterprises retain insurance that can and will cover the cost of demolition. However, in some cases as determined by the FCO, the demolition of private commercial structures by a State or local government may be eligible for FEMA reimbursement only when such removal is in the public interest.

## **Types of Eligible Demolition Costs**

Eligible costs associated with the demolition of private structures include:

- Capping wells;
- Pumping and capping septic tanks;
- Filling in basements and swimming pools; and
- Testing and removal of hazardous materials from unsafe structures including asbestos and household hazardous wastes.

Ineligible costs associated with the demolition of private structures include:

- Removal of slabs or foundations, except in very unusual circumstances, such as when disaster-related erosion under slabs on a hillside causes an immediate public health and safety threat; and
- Removal of pads and driveways.

## **Required Documentation for Demolition of Private Structures**

The following documents will be required for FEMA's eligibility review of costs associated with the demolition of private structures.

1. A **Right-of-Entry Form** will include the "hold harmless agreement" applicable to the project's scope-of-work. A hold harmless agreement documents the property owner's promise that he/she will not bring legal action against the applicant or the federal government if there are damages or harm done to the property. FEMA's Office of Chief Counsel (OCC) should review the Right-of-Entry Form and the hold harmless agreement. PA staff will provide more detailed review to include verification that the owner signed the form, the address on the Right-of-Entry Form matches the supporting documentation, and the insurance information (policy number) is present, if applicable.

2. **Photos** are strongly encouraged to show the condition of the property prior to the beginning of the work. Generally, this is one- or two-labeled pictures that confirm the address and identified scope-of-work on the property.

3. A **Structural Assessment** or other documentation of the applicant's certification that the structure is determined to be unsafe or poses an immediate threat to the public.

4. A **Notice of Demolition** shall be issued by the governing jurisdiction only after all required federal and state criteria are met and documented. Each governing jurisdiction shall also attempt to notify property owner through direct mail and local media. Notices of Intent to Demolish shall be conspicuously posted on the structure to be demolished. All such notices shall inform the property owner when the demolition will begin; and notices shall be posted so as to provide a reasonable period of time in order for personal property to be removed.

5. **Documentation of Environmental and Historic Review.** Demolition work on private property must satisfy compliance review requirements as established by 44 CFR Parts 9 and 10 and all other applicable Federal environmental and historic preservation requirements. Included in this review is confirmation that the State Historic Preservation Office (SHPO) has absolved the property and structure of any historic significance.

Post-work documentation must include the completed work orders confirming the debris removal was completed, the final inspection by the local inspector, and the date of inspection. Photographs must be included for verification purposes.

## **Additional Considerations**

### ***Duplication of Benefits***

FEMA is prohibited from approving funds that would result in a duplication of benefits, and therefore, State and local governments must take reasonable steps to prevent such an occurrence. These steps include the requesting entity's agreement to research whether insurance coverage exists for the private property debris removal or demolition of private structures.

If it is discovered that duplication of benefits has occurred, the State or local government must agree to make reasonable efforts to recover such proceeds paid to the property owners and remit in a timely fashion to FEMA.

When demolition is covered by an insurance policy, the insurance proceeds must be used as the first source of funding. Public Assistance grant funding may be used to pay for the remainder of demolition costs after insurance proceeds are recouped.

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## **PART II**

# **Debris Management Planning Concepts**

## Chapter 5

### Applicant Roles & Responsibilities

- ◆ Debris Management Staff Organization and Structure
  - ◆ Debris Management Staff Responsibilities
    - Debris Project Manager
    - Debris Management Planning Sections
      - Administration
      - Contracting and Procurement
      - Legal
      - Operations
      - Engineering
  - ◆ Questions to Consider
  - ◆ To Do Checklist
- 

The success of a Debris Management Plan is dependent upon the dedication of the management and staff to fully vet and commit their organization to researching, planning, and implementing a debris removal operations plan effectively and efficiently. Proper planning by management and training of employees will provide an applicant with a foundation for a quick and successful recovery.

The following text discusses the personnel that will be necessary to plan and develop the Debris Management Plan. A sample outline for the Debris Management Plan is supplied for use and reference in *Appendix A*. During a disaster event, the same staff members would be expected to implement the plan. The management staff organization may differ by size of jurisdiction, but the roles and tasks will not change.

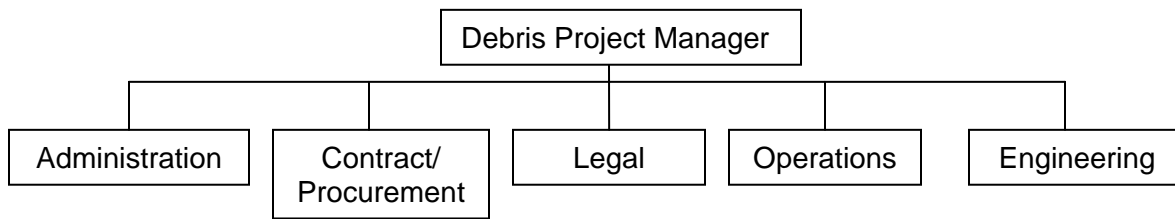
## Debris Management Staff Organization and Structure

The size and composition of a staff organized to deal with debris clearance, removal and disposal issues will depend on the magnitude of the disaster and the size of the community. A pre-disaster debris planning staff may be quite small; however, following a major disaster, additional staff members may be required.

Successful debris operations require collaborative efforts between departments within the local government and with specific external agencies that have regulatory authority over debris operations. It is essential that prospective staff members have as much training as possible and interface with other agencies responsible for debris clearance, removal and disposal activities, such as the National Guard, the state department of transportation (DOT), the state police, and the state emergency management office prior to any anticipated disaster.

To implement debris operations quickly, it is important for emergency response and recovery personnel to have a clear understanding of how their everyday job responsibilities and functions apply to debris operations. The applicant's debris staff should be comprised of full-time personnel supplemented with personnel from other staffs and agencies. The planning process should include a review of individual departmental functions and their responsibilities for implementing debris operations.

Immediately following a disaster event, the planning process should establish a "Disaster Debris Management Team," that will convene as a working group, to facilitate successful coordination following a disaster event. Team members should consist of personnel from departments within the local government and representatives from external agencies such as regional waste management, joint power authorities, sanitation districts, state and federal environmental offices and other agencies, which have shared responsibilities over solid waste issues. Each member of the team will be responsible for implementing debris operations in accordance with the planned goals and objectives, and in compliance with federal, state and local laws.



Debris Management Planning Staff Structure

## Debris Management Staff Responsibilities

No two jurisdictions have the same department or section designations; therefore, this document refers to each department or section according to its function rather than a specific department designation. The following discussion gives the function of each section, and a brief description of the tasks it will perform in developing the Debris Management Plan.

Each section will be responsible for specific elements of the Debris Management Plan. Those general duties are explained in the remainder of the chapter. Section responsibilities often overlap making coordination and communication critical to the success of the Debris Management Plan. In many instances a particular section will be involved in numerous elements of the Debris Management Plan.

These overlapping coordination responsibilities and logistical issues illustrate the need for one primary coordinator, or Debris Project Manager. The Debris Project Manager's role and responsibilities are paramount in coordination efforts and ensuring communication between planning and implementation sections.

### ***Debris Project Manager***

The primary decision maker is to be designated the Debris Project Manager. The Debris Project Manager is responsible for all components of the debris operations. The Debris Project Manager should be knowledgeable of the applicant's processes, procedures, personnel, resources, and limitations. It is important for the Debris Project Manager to keep communication and coordination efforts between sections as a priority.

The Debris Project Manager has overall responsibility for the operations, planning, logistics, and cost of the debris management operations. The Debris Project Manager will assign tasks to team members and track the completion of tasks to ensure quick implementation of the debris removal operations.

### ***Debris Management Planning Sections***

#### **Administration**

The Administration section typically includes the finance, personnel, and public information departments within a governing body. It is important for this section to establish a records management system in order to collect and keep all the documentation that may be required for the PA grant. Documentation may include, but is not limited to:

- Personnel policies,
- Labor and equipment timesheets and summaries,
- Safety procedures,
- Contract procurement procedures,
- Contracts,
- Billing and invoices, including debris hauler load tickets,
- Environmental permits,
- Right-of-entry documents,
- Hold harmless agreements for private property operations,
- Public information announcements, and
- Debris salvage-value information.

The Finance department is usually responsible for developing an emergency response and recovery budget, tracking expenses and ensuring funds are available for personnel, equipment, supplies and contract service costs.

The Administration section should include a public information officer to distribute and educate citizens of the debris operations. Planning components of the public information plan should include the use of various types of information vehicles (print, radio, internet, etc.) and the pre-scripted information that will be distributed. This includes information such as:

- Debris pick-up schedules,
- Disposal methods and ongoing actions to comply with state and Environmental Protection Agency regulations,
- Disposal procedures for self-help and independent contractors,
- Restrictions and penalties for creating illegal dumps,



- Curbside debris segregation instructions,
- Public drop-off locations for all debris types, and
- Process for answering the public's questions concerning debris removal

Chapter 13, *Public Information* further discusses the types of information and how it can be distributed.

### **Contracting and Procurement**

The primary role of the Contract or Procurement office is to have debris contracts in draft form ready for advertisement or have pre-qualified contractors in-place prior to the event. This portion of the plan will need to be updated as the jurisdiction's procurement procedures and contracts may expire and change over time. Contract and Procurement planning will include:

- Developing contract requirements,
- Establishing contractor qualifications,
- Distributing instruction to bidders,
- Advertising bids,
- Establishing a pre-disaster list of pre-qualified contractors,
- Managing the contracts scope-of-work, and
- Establishing a post-disaster contracting procedure if necessary.

### **Legal**

The applicant's Legal staff will lead the review process for all legal matters in the debris management planning process. In addition to advising the debris management planning staff, the following tasks should also be performed by the legal section:

- Review all contracts,
- Land acquisition process for temporary debris management sites,
- Review all insurance policies,
- Ensure environmental compliance before, during and after operations,
- Ensure that site restoration and closure requirements are fulfilled,
- Building condemnation processes,
- Legal process for private property demolition and debris removal, and
- Review Right of Entry and Hold Harmless agreements.

## **Operations**

The Operations personnel are responsible for the supervision of government and contract resources and overall project implementation. The Operations section is responsible for implementing the entire debris removal operation. Planning tasks include:

- Positioning equipment and resources for the response and recovery debris removal operations,
- Staffing schedules and plans,
- Providing communication, facilities, services, equipment and materials to support the response and recovery activities,
- Monitoring and directing force account and contract labor,
- Distributing response and recovery activities and resources,
- Operating and managing the collection, debris management site, and disposal plans,
- Creating a demolition plan for structures, if necessary, and
- Reporting progress for distribution to the debris management planning staff.

## **Engineering**

The Engineering staff supports all other debris management sections, in a technical role. The Engineering section provides debris quantity assumptions, economic analysis and feasible solutions for:

- Forecasting debris volume based on assumed disaster type,
- Estimating strategy for post-disaster debris quantities,
- Mapping debris haul routes,
- Selecting debris management sites and layout,
- Determining reduction and recycling means and methods,
- Identifying and coordinating environmental issues,
- Accessing available landfill space and determining if additional space is needed,
- Developing the debris collection plan,
- Writing the contract scope-of-work, conditions, and specifications,
- Coordinating with other local and state jurisdictions for road clearance and operations,
- Establishing a process for building damage assessment and condemnation (includes public and private properties), and
- Issuing permits.



## Questions to Consider

1. What departments within your agency are responsible for:
  - Debris removal?
  - Solid waste removal?
  - Demolition?
  - Public information?
  - Contract services?
2. What departments within your agency should participate in the development of a Debris Management Plan?
3. Who will be the Debris Project Manager for your jurisdiction?
4. What staff positions within your agency or department should be designated to coordinate state and federal assistance for debris management activities?
5. What local ordinances have been adopted in your community apply to debris management activities?
6. Which staff member will be responsible for coordinating efforts with FEMA and the state during a Presidentially declared disaster?



## To Do Checklist

1. Assign management personnel to Debris Management Team for planning and implementation of the Debris Management Plan. Assignments include management and planners for:
  - Administration
  - Contracting/Procurement
  - Legal
  - Operations
  - Engineering
2. Establish an organization chart with names and contact numbers for distribution to the planning staff.
3. Assign a primary coordinator, and additional staff if necessary, to coordinate state and federal assistance for debris management activities.
4. Assemble any local ordinances that have been adopted in the jurisdiction that apply to debris management activities.

## Chapter 6

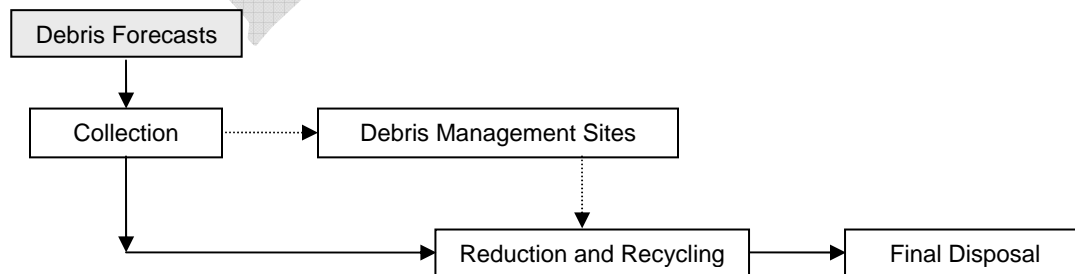
### Debris-Forecasting for a Design Event

#### Chapter Highlights

- ◆ Design Disaster Event
- ◆ Disaster Characteristics
- ◆ Land Use and Geography
- ◆ Forecasting Methods
  - Buildings
  - Vegetation
  - Volume – Weight Conversion Factors
  - Debris Composition
    - Hurricanes
    - Construction and Demolition (C & D)
  - Other Forecasting Methods
    - Remote Sensing
    - Forecasting Models in Development
- ◆ Questions to Consider
- ◆ To Do Checklist

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Quantifying the amount of debris after the disaster is known as “estimating.” Predicting the amount and type of debris prior to a disaster event is known as “forecasting.”



Forecasting the type and quantity of debris will begin the debris planning process. By forecasting the type and quantity of debris, the planning staff can better define the scope-of-work of the debris management operations. Debris forecasts can be used to determine the required response and recovery resources, the number and size of storage and reduction sites, and the final disposition of the disaster-related debris.

Staff can reasonably forecast debris by becoming familiar with the impacts that result from various types of disasters. Realistic debris forecasts depend on the type and size of disaster an applicant anticipates their community will encounter.

## **Design Disaster Event**

The type of disaster and the debris that is generated may be similar for an entire region of the country, but the size and extent of the affected areas will be specific to an applicant's jurisdiction. For planning purposes, a "design event" will be used to calculate and forecast the amount of each type of debris that will be generated for that particular disaster event. The staff will need to determine the size and extent of a potential disaster.

Historical data is most often used to determine the design event for hurricanes, tornadoes, ice storms, wildfires, and floods. The design disaster event must be within reason and not only take into account historic events, but also any altered criteria that may affect the disaster scenario. For example, a flood event may not impact as many single family homes as a previous event, due to the geographic change in a river channel or revised zoning laws that prohibit building in a flood-prone area.

Earthquake and terrorism design events also need to be analyzed for reasonableness and practicality. For instance, an applicant may only need to plan for a portion of its structures to be damaged or destroyed during a disaster event, rather than all of its structures, if more stringent seismic building codes and better construction practices have been employed since a previous event of the same nature.

The more information gathered during the planning process, the more realistic the projected debris quantities will be for future disasters.

## **Disaster Characteristics**

The following are general descriptions of natural and manmade disasters and the associated debris that it generates.

### ***Hurricanes and Typhoons***

The terms “hurricane” and “typhoon” are two regional names for the same phenomenon. The damaging forces of hurricanes and tropical storms include high velocity winds (up to 150 miles per hour or higher in gusts), storm surge and wave action. The most severe damage frequently occurs in the shore lands adjacent to the ocean. The resultant debris consists primarily of vegetative matter; construction materials from damaged or destroyed structures; personal property; marine vessels; and sediment. Although the greatest concentration of debris will be located along the shoreline, flooding and tornadoes spawned by hurricanes can cause damage and leave extensive amounts of natural and manmade debris far inland.

### ***Tsunamis***

A tsunami is a wave train, or series of waves, generated in a body of water by an impulsive disturbance that vertically displaces the water. Earthquakes, landslides, volcanic eruptions, explosions, and even the impact of cosmic bodies, such as meteorites, can generate tsunamis. Tsunamis can savagely attack coastlines, causing devastating property damage and loss of life. They are capable of inundating and flooding areas hundreds of yards inland past the typical high-water level. The fast-moving water associated with the inundating tsunami can crush homes and other coastal structures. Debris from tsunamis consists of building materials, concrete, asphalt, vegetative matter, dead mammals, fish and other marine forms. Tsunamis can be very deadly and a community could expect to have a high loss of life.

### ***Tornadoes***

Damage from tornadoes is caused by high-velocity rotating winds. The severity of the damage depends on the velocity of the tornado funnel and the length of time the funnel is on the ground. Damage is generally confined to a narrow path, which can be up to one-half mile wide and from 100 yards to several miles long. Tornado debris consists primarily of trees, construction materials from damaged or destroyed structures, and personal property.

## ***Floods***

Severe rainstorms, hurricanes, tsunamis or reservoir failure can cause flooding. Damage to structures from flooding is caused either by inundation or high velocity water flow. Structural damage is usually limited to the floodway and the floodplain area immediately adjacent to the waterway. Heavy structural damage may result from high velocity waters in mountainous areas or failure of a flood control project, such as a dam or levee. Flood debris consists of sediment, wreckage, personal property and sometimes hazardous materials deposited on public and private property. Additionally, heavy rains and floods may produce landslides; in such cases, debris consists primarily of soil, gravel, rock and some construction materials.

## ***Earthquakes***

Seismic forces along fault lines generate shock waves that cause ground shaking, surface ruptures, liquefaction, landslides, mudflows and earth cracking. Damage may be localized at the epicenter or widespread to adjoining areas. Secondary effects of earthquakes such as aftershocks, fires, explosions, and landslides cause further damage. Debris from an earthquake generally consists of damaged personal property, structural building materials, charred wood, concrete and asphalt.

## ***Fires***

Wildfires or urban fires can destroy or partially damage building structures, vehicles, public infrastructure and vegetation. The loss of vegetative growth on hillsides may result in mudslides and subsequently cause further structural damage. Debris from fires consists of burnt personal property, burnt metals, charred wood, ash, asbestos, and other hazardous wastes.

## ***Ice Storms or Snowstorms***

Debris from ice storms or snowstorms will consist of significant amounts of vegetative debris and overhead utility service components.



## Acts of Terrorism

Disasters caused by civil unrest and acts of terrorism are not as frequent as natural disasters. Nevertheless, these types of disasters bring about great destruction to private and public facilities and loss of human life.

In acts of terrorism, the disaster site is treated as a crime scene. Coordination with law enforcement authorities, the coroner's office and health officials is required before any debris is handled or disposed.

Debris generated from acts of terrorism consists of building materials, hazardous substances, concrete, metals, glass, spoiled foods, charred wood, electrical wires, furnishings, appliances, personal effects and office equipment.

## Disaster Debris Streams

As noted in the disaster descriptions above, disasters normally generate a mix of different types of debris. Table 6-1 summarizes the types of debris in each type of disaster.

Typical Types of Disasters	Debris Streams										
		Vegetation	Sediment/ Silt	Personal Property / Household Items	C&D/ Structure	Charred Matter	Utilities/powerlines	HHW	White Goods / Metals	Vehicles and Vessels	Putrescent
	Hurricanes	X	X	X	X		X	X	X	X	X
	Tornadoes	X		X	X		X	X	X	X	X
	Floods	X	X	X	X		X	X	X	X	X
	Earthquakes		X	X	X		X	X	X		
	Wildfires	X	X	X		X	X	X	X		
	Ice Storms	X					X				

Table 6-1 Common Debris Streams for Typical Types of Disasters

Different handling and disposal methods are required for particular debris types and will impact the scope-of-work of the Debris Management Plan. Refer to

Chapter 3, *Debris Removal from Public Property* for a specific description of each type of debris.

## Land Use and Geography

Once the design event is established, the planning staff will study the land use or anticipated location of the debris in order to begin to quantify the types of debris. Different land use types will generate different types of debris that may require distinct handling in the debris stream. For example, rural areas may have more vegetative debris; whereas, urban areas may have more construction and demolition debris. Industrial parks may have special environmental concerns compared to park areas. Planning staff may find it useful to divide the jurisdiction into sectors in order to keep the forecasting manageable.

The planning staff will need to try to anticipate some unexpected debris sources. For example, more personal property (household furnishings, clothing, rugs, etc.) debris is typically generated during wet events, such as floods or hurricanes, which will be moved to the curb for collection. Additionally, since flood-deposited sediment is compacted in-place during this type of event, the volume will increase when it is picked up and moved for collection.

## Forecasting Methods

After the disaster parameters and geographic extent is established, specific debris volumes can be quantified by using historical information or forecasting models.

Historical records provide a basis for forecasting disaster-generated debris and can be used for planning purposes. Previous contracts for debris removal, recycling activities, volume-reduction processing and landfill disposal records should be reviewed thoroughly to determine the quantity of disaster debris that was generated for a particular disaster event.

If previous disaster data is not available, assumptions may be made from neighboring jurisdictions' experience, or from USACE modeling. USACE emergency management staff has developed a modeling methodology designed to forecast potential amounts of hurricane-generated debris. Based on data from Hurricanes Frederic (1979), Hugo (1989) and Andrew (1992), the methodology has a predicted accuracy of plus/minus 30 percent. USACE mathematical modeling forecasts the quantity of debris specifically generated by hurricanes and is available in *Appendix J, USACE Hurricane Debris Estimating Model*.

Additionally, the USACE has established several basic techniques to forecast buildings and debris quantities. These techniques can be used to forecast debris quantities prior to an event or estimate quantities after a disaster.

## ***Buildings***

### **Residential buildings**

The formula for a single family home is:

$$L' \times W' \times S \times 0.20 \times \text{VCM} = \text{___ cubic yards of debris}$$

Where:

L = length of building in feet,

W = width of the building in feet,

S = height of building expressed in stories, and

VCM = Vegetative Cover Multiplier.

The vegetative cover multiplier is a measure of the amount of debris within a subdivision of neighborhood. The descriptions and multipliers are described as:

- **Light** (1.1 multiplier) includes new home developments where more ground is visible than trees. These areas will have sparse canopy cover.
- **Medium** (1.3 multiplier) generally has a uniform pattern of open space and tree canopy cover. This is the most common description for vegetative cover.
- **Heavy** (1.5 multiplier) is found in mature neighborhoods and woodlots where the ground or houses cannot be seen due to the tree canopy cover.

The table below can be used to forecast debris quantities for a totally destroyed single family, single story, homes in the applicable vegetative cover category.

Typical House (square feet)	Vegetative Cover Multiplier			
	None	Light (1.1)	Medium (1.3)	Heavy (1.5)
1000 sf	200 cy	220 cy	260 cy	300 cy
1200 sf	240 cy	264 cy	312 cy	360 cy
1400 sf	280 cy	308 cy	364 cy	420 cy
1600 sf	320 cy	352 cy	416 cy	480 cy
1800 sf	360 cy	396 cy	468 cy	540 cy
2000 sf	400 cy	440 cy	520 cy	600 cy
2200 sf	440 cy	484 cy	572 cy	660 cy
2400 sf	480 cy	528 cy	624 cy	720 cy
2600 sf	520 cy	572 cy	676 cy	780 cy

Table 6.2, based on the USACE debris-forecasting methods

The amount of personal property within an average flooded single-family home has been found to be:

- 25-30 cy for homes without a basement, and
- 45-50 cy for homes with a basement.

Mobile homes have less wasted space due to the construction and use. The walls are narrower and the units contain more storage space. Therefore, the typical mobile home will generate more debris by volume than a single family home. Historically the volume of debris from mobile homes has been found to be:

- 290 cy of debris for a single-wide, and
- 415 cy of debris for a double-wide.

### Outbuildings

All other building volumes may be calculated by using the following formula:

$$\frac{L' \times W' \times H' \times 0.33}{27} = \text{cubic yards of debris}$$

Where:

L = length of building in feet,

W = width of the building in feet,

H = height of building expressed in feet,

0.33 is a constant to account for the “air space” in the building, and

27 is the conversion factor from cubic feet to cubic yards.

**Vegetation** is the most difficult to estimate due to the random sizes and shapes of trees and shrubbery. Based on historical events, the USACE has established a few rules of thumb in forecasting and estimating vegetative debris.

- Treat debris piles as a cube, not a cone, when estimating.
- 15 trees, 8 inches in diameter = 40 cy (average)
- One acre of debris, 3.33 yards high = 16,117 cy

### **Volume – Weight Conversion Factors**

These factors to convert woody debris from cubic yards to tons, and vice versa, are considered reasonable for mixed debris, and were developed by the USACE. To verify these conversion factors in the field, several truckloads may be tested. Trucks should be well-loaded, contain woody debris typical of that being removed, and truck capacities should be verified. It is recommended that testing be performed with all affected parties present.

<b>Volume to Weight Conversion Table</b>		
	Tons (T)	Cubic Yards (cy)
Vegetative Debris, (mixed)	CY / 4	T x 4
Softwood vegetation	CY / 6	T x 6
Construction and Demolition (C&D)	CY / 2	T x 2

Table 6.3

### **Debris Composition**

#### **Hurricanes**

Hurricanes generally produce larger amounts of debris than other types of disaster events. For planning purposes in hurricane-prone areas, it may be prudent to use a hurricane scenario as the disaster event.

It is important to consider the mix of debris that may be generated, though there is no standard composition data that can be applied for all hurricanes. For example, the composition of debris from Hurricane Andrew (1992) in Florida was generally 30 percent clean, woody debris and 70 percent construction and demolition debris. After Hurricane Fran (1996) in North Carolina, the mix was exactly the opposite. Considering the land-use types and existing infrastructure (types of buildings) will assist in making forecasts for planning purposes.

## **Construction and Demolition (C&D) Debris**

One type of debris that has a fairly consistent composition is mixed construction and demolition debris. A good average for that mix is:

- 42 percent burnable, but requires sorting \*
- 5 percent soil
- 15 percent metals
- 38 percent will be disposed of in a landfill

There may be prohibitions against burning construction debris.

## ***Other Forecasting Methods***

### **Remote Sensing**

The use of remote sensing information (aerial photographs, satellite data, etc.), either alone or in combination with field surveys, may be of significant use in forecasting the amount, mix, and extent of debris. Geographical Information Systems (GIS) maps should be considered early in the planning process. Depending upon the area, it is usually possible to quickly obtain GIS maps of landfills, Superfund sites, transportation routes, etc. As data on debris is obtained, consider plotting data on GIS maps.

### **Forecasting Models in Development**

The private sector is currently developing other debris-estimating models for tornadoes and hurricanes. These models are based on GIS or phone book data and on the USACE model. The federal government and private industry is also working on a model to determine earthquake debris. The model takes into consideration various characteristics of an earthquake to anticipate the quantity of debris that could be generated by an earthquake.

Other debris forecasting methodology and computer models may be available through other private vendors or other public sources.

Note that FEMA does not specifically endorse a particular product; however, such products may assist in forecasting disaster-generated debris and may be utilized for planning purposes.



## Questions to Consider

1. Describe the types of disasters and debris mix that place your jurisdiction at risk.
  2. Historically, what type of disaster generated:
    - The most amount of debris (quantity)?
    - The most varied types of debris?
  3. Who will be responsible for:
    - Forecasting the debris quantities prior to the disaster?
    - Estimating the post-disaster debris quantities?
- 



## To Do Checklist

1. Establish a design disaster event. This may be based on historical events.
2. Forecast the type and quantity of debris for the design event. This can be based on historical data, recent neighboring community damages, or modeling methods.
3. If the community is large, forecasting may be accomplished by dividing it up into sectors.

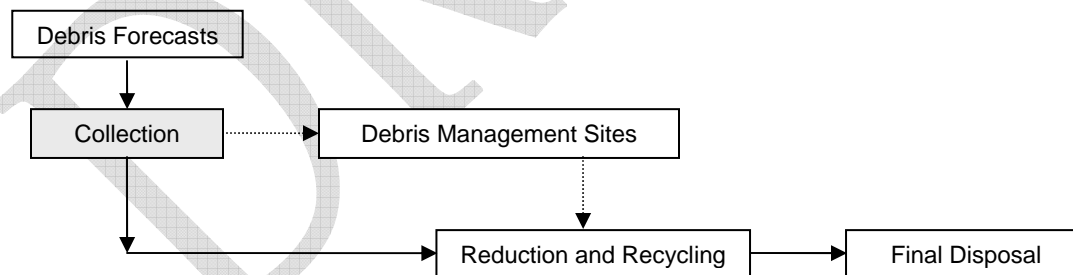
## Chapter 7

### Debris Collection Plan

#### Chapter Highlights

- ◆ Developing a Collection Strategy
    - Response Operations
    - Recovery Operations
  - ◆ Types of Collection Methods
    - Curbside Collection
    - Collection Centers
  - ◆ Collecting Hazardous Waste and White Goods
  - ◆ Questions to Consider
  - ◆ To Do Checklist
- 

The next step after determining the design event and debris forecasting is to develop a debris collection plan.



Collection operations are normally broken into two phases – response and recovery. Response occurs sometimes during and always immediately after an event in order to clear immediate threats. The recovery operation begins once the immediate threats are cleared and the residents return to their homes and begin to bring debris to the public rights-of-way.



An efficient Debris Management Plan includes response and recovery strategies, which outline the priority of clearing emergency access routes and assigning specific debris removal resources.

## **Developing a Collection Strategy**

To establish a strategy, the planning staff must consider several variables, which include:

- Amount and type of forecasted debris,
- Employee labor resources,
- Available equipment,
- Urgency of the debris operations,
- Damage to priority infrastructure, and
- Limitations of forces and skills for specialized debris issues.

### ***Response Operations***

Debris removal activities during the response phase include immediate actions for the removal of debris to facilitate search and rescue efforts, to allow access to critical facilities and to prevent flooding. Actions required during the response phase are usually completed within a matter of days following a disaster event.

Local governments usually use their own labor force and equipment to remove debris during this phase. In circumstances when the existing labor force is not sufficient, or when specialized services are required, local governments may supplement their work efforts by activating mutual aid agreements or by awarding short-term debris removal contracts for specific work.

Response operations primarily focus on the emergency access routes and main arterials. The planning staff should identify which roads and streets are essential to emergency operations so they can manage and direct local resources. The planning staff should identify and target areas for possible state and mutual aid assistance to augment their efforts.

Prior to and immediately following the event, extricating people and providing access to health care facilities are the top priorities; therefore, the major arterial routes are given priority for the emergency services staff such as police, fire, and ambulance service. Emergency operations infrastructure, such as the emergency operations center and supply distribution centers, normally will be the next priority. Other infrastructure such as water, wastewater, and utilities is typically

given the third priority. Priorities for all other routes are established by the applicant based on its particular situation. An example priority list is given below.

1. Fire, police, and ambulance service routes
2. Access routes to trauma centers, hospitals, critical care units, and jails
3. Major arterial routes
4. Roads and streets to the debris management center and EOC
5. Supply routes to emergency supply distribution centers
6. Roads and streets to government facilities
7. Communication towers and systems access
8. Utility access routes
9. Routes to shelters

Maps showing specific streets, roads, buildings, hospitals and addresses, along with specific labor assignments are necessary for emergency staff to understand their roles. All other roads and streets will normally be cleared once the emergency and major access routes are opened and the jurisdiction transitions to the recovery operations.

### ***Recovery Operations***

The recovery phase focuses on collecting the remaining debris, reducing or recycling, and final disposal. Development and management of a debris management site is considered a recovery activity as well. Depending on the quantity and the complexity of the debris removal actions, debris removal activities could continue for several months. Local governments can use a combination of force account and contractor services for debris removal activities during this phase.

### **Types of Collection Methods**

The fundamental component of a disaster debris management strategy is the collection of debris. The public expects to have debris removed from their neighborhoods immediately after a disaster event. The implementation of disaster debris collection immediately after the disaster event will assure the public that recovery efforts are in progress and that the community will return to normal quickly. Developing an approach to collect debris during the planning process will assist local governments to begin collecting debris immediately following a disaster event.

The debris type, amount, and urgency will all determine which collection method will be used. There are two main methods of debris collection – curbside collection and collection centers.

The planning staff may tailor the collection operation using curbside, collection centers or a combination of both, depending on the specific jurisdiction, quantities and types of debris.

### ***Curbside Collection***

Curbside collection parallels an applicant's normal garbage and trash collection operations. Debris is placed at the curb or public right-of-way by the residents for the applicant's collection. The only difference between the subcategories discussed below is the separation of the types of debris at the point of collection.

### **Mixed Debris Collection**

Collecting mixed debris by the applicant allows for residents to place all debris types in one specified area, usually along the public right-of-way, in front of their home. While this is the most convenient for the public, it does not facilitate effective recycling and reduction efforts, as the debris will need to be handled multiple times. Therefore, this method prolongs recycling and reduction efforts and increases operational costs.

### **Source Segregated Debris Collection**

Residents are directed to sort the debris by material type and place it at the curb in separate piles. Trucks designated for a particular debris type collect the assigned debris and deliver it to a temporary staging area, or debris management site, reduction, recycling, or disposal facility. The disadvantage of this method is that it requires more trucks to collect the different types of debris; however, this increased equipment cost may be offset by avoiding the labor cost and time to separate the debris by hand. Source segregated debris collection offers the potential of high salvage value and efficient recycling/reduction processing. This method will be important when collecting hazardous and environmentally sensitive debris, such as household hazardous waste and white goods. Both types of debris are discussed at the end of the Collection Methods section.

## ***Collection Centers***

The second type of collection method is to have the residents transport their debris to a common location. Large roll-off bins may be placed on public rights-of-way or public property for the residents to bring their debris for collection. This is well suited for rural, sparsely populated areas or logistically difficult conditions (i.e., hilly neighborhoods) where curbside collection is not practical. Separate bins can be designated for a particular type of debris. The associated costs are generally low since the public essentially accomplishes the material collection and separation themselves.

The planning staff will need to assign employees to manage the development of the site and oversee the operations of the collection center. The planning staff will need to design the circulation for proper ingress, egress, and collection bin exchanges. Employees will need to be stationed at the centers during the collection period in order to have empty bins brought in when the current ones are full, to ensure that debris materials are placed in the correct bins, and that the collection center does not become a dumping ground for non-disaster-related, i.e., ineligible, debris.

The planning staff's legal counsel may investigate the liability issues that the site may present, especially if vegetative debris is being brought in and handled by the jurisdiction's residents.

## **Collecting Hazardous Waste and White Goods**

Household and non-household hazardous waste and white goods may be collected by either method described above. Regardless of how it is collected, the planning staff will need to understand the effects this collection can have on the overall debris clearance, removal, and disposal mission. The two most common types of debris that will need special collection are household hazardous waste and white goods.

### ***Household Hazardous Waste***

Household hazardous waste (HHW) mixed with other debris types will contaminate the entire load, which necessitates special disposal methods such as in a particular part of a landfill. Typically, the landfill will require special liners and a more intense permit standard due to the hazardous waste. The disposal cost of household hazardous waste is generally higher than the disposal of other

waste; therefore, the overall cost of debris disposal can escalate quickly if the HHW collection and disposal is not planned and executed with care.

Local governments, in coordination with the state and county, will often host HHW collection center events, or “round-ups,” several times during the year. The round-ups are planned scheduled events for residents to legally dispose of unused household hazardous materials. The applicants should host a HHW round-up following a disaster event, in order to avoid the commingling of the disaster-related debris, limit the amount of contaminated waste, and thereby reduce the overall disposal cost of the debris.

Pre-disaster planning should include training for hazardous waste response teams to collect, sort, store and dispose of excessive quantities of HHW. The planning staff may consider having emergency hazardous waste removal/disposal contracts in-place or pre-qualifying contractors to perform the work. The planning staff may prepare generic scopes-of-work that can be fine-tuned with minimal effort, in order to begin recovery operations as soon as possible.

### **White Goods**

The planning staff will need to take special care in finding certified recycling centers that are permitted to take white goods. The refrigerants and other machine fluids are normally regulated by the state environmental agency and can only be reclaimed by certified technicians and disposed of at a permitted facility. To avoid releases of refrigerants or oils, the collection of white goods should be accomplished carefully by manually placing the appliance on trucks or by using lifting equipment that will not cause damage to the elements that contain the refrigerants or oils.

Having contracts or agreements in-place prior to a disaster will expedite the recovery efforts.

Recycling scrap metals and parts from white goods presents an opportunity for applicants to offset the collection and disposal costs. This will also reduce the amount of waste going to a landfill.

The state environmental office and the Environmental Protection Agency provide first response functions in cases of commercial, agricultural, industrial,

and toxic waste spills. The Debris Management Plan should include the contact information for both parties in case of a large contamination issue.



### Questions to Consider

1. What facilities will be critical for establishing clearance or removal priorities in the Debris Management Plan?
  - Emergency (police, fire, hospitals)
  - Utilities (Electrical, water, sewer, communications)
  - Other
2. Who will conduct response and recovery activities? Force account labor? Contractors?
3. How will debris be collected throughout the jurisdiction?
4. How will the collection activities handle household hazardous waste and white goods?



### To Do Checklist

1. Establish priorities for debris clearance and removal during response and recovery operations.
2. Identify which collection method best suits your jurisdiction.
3. If using **collection centers**:
  - a. Identify appropriate locations for collection centers.
  - b. Identify if hazardous or household hazardous waste will be collected.
  - c. How the collection centers will be monitored.
  - d. How long the collection centers will be in place.

4. If using **curbside collection**:  
Identify the work force that will collect the debris.
  - a. If **Force account**  
Assignments for:
    - Labor
    - Equipment
    - Sector or section of the applicant's jurisdiction
  - b. If **Contractors**  
Assignments for:
    - Labor
    - Equipment
    - Sector or section of the applicant's jurisdiction
    - Monitor assignments for contractor activities
5. Establish a process for handling household hazardous waste and white goods.
6. Establish a record management system to be implemented during a disaster event. The record management system will include documentation such as
  - a. Labor and equipment timesheets
  - b. Labor and benefit rates
  - c. Personnel pay policy
  - d. Invoices
  - e. Load tickets
  - f. Load ticket summaries
  - g. All other field documentation that may be required for eligibility considerations. This additional documentation will be discussed in the remaining chapters.
  - h. Assign staff to organize labor and equipment timesheets
7. Train and emphasize the need for documenting key debris eligibility requirements for the PA grant considerations.
  - a. Hours worked,
  - b. Hours the equipment was operating,
  - c. Location of work performed,
  - d. Amount of debris removed, and
  - e. Type of debris.

## **Chapter 8**

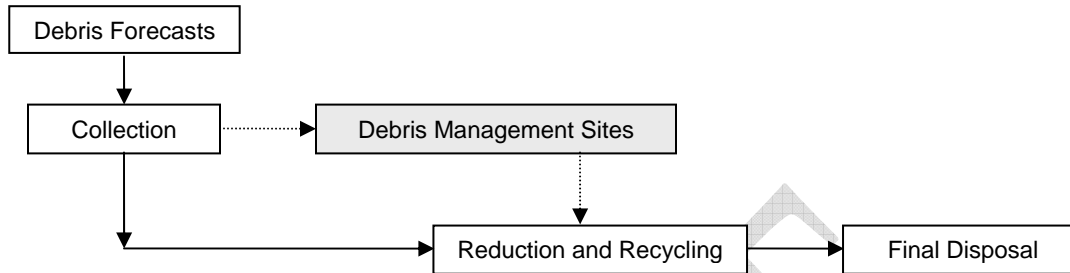
### **Debris Management Sites (DMS)**

#### **Chapter Highlights**

- ◆ Advantages and Disadvantages
  - ◆ Identifying Debris Management Sites
    - Ownership
    - Size
    - Location
    - Environmental Concerns
  - ◆ Baseline Data Collection
  - ◆ Environmental Monitoring Program
  - ◆ Permits
  - ◆ Establishment and Operations Planning
    - Site Design
      - Site Preparation
      - Site Layout
        - Operational Boundaries
        - Traffic Patterns
    - Site Management
      - Site Manager
      - Debris Monitors
      - Safety Personnel
    - Site Closure
  - ◆ Questions to Consider
  - ◆ To Do Checklist
-



Debris Management Sites (DMS) are established when applicants are not able to take debris directly from the collection point to the final disposition location.



A DMS is a location for applicants to temporarily store, reduce, segregate, and/or process debris before it is hauled to its final disposition. They are frequently used to reduce debris and increase the operation's flexibility and when landfill space is limited.

By employing a DMS, the debris can be collected from the right-of-way and public properties in order to expedite permanent recovery operations. Locations for temporary debris storage and processing facilities should be identified during the planning process, and a listing included in the Debris Management Plan.

## Advantages and Disadvantages

The advantages and disadvantages of a DMS are listed below.

### Advantages:

- Flexibility of operations. The DMS may also include a collection center for the public's use.
- Facilitation of recycling and reduction of debris. Specific reduction, recycling or segregation needs can be designed into the site.
- Expedition of debris collection. Having a site for temporary storage and reduction allows time for local landfill site preparation before final disposal. The DMS may also be established at a location central to the disaster event, thereby reducing travel time from the disaster area to the disposal site.

Disadvantages:

- If applicant-owned land is not available, leasing land is expensive.
- Additional costs for proper planning, engineering, and permitting.
- Considerable environmental studies and historic reviews required prior to establishing the site.
- Environmental review and potentially extensive site cleanup may be necessary to properly close the site.
- DMS requires dedicated site management and staff for efficient operations, safety, and documentation considerations.

## Identifying Debris Management Sites

Identifying potential sites before a major natural disaster will expedite debris removal and subsequent volume reduction and disposal actions. The designated debris project manager and staff should work closely with other local, tribal and state officials to develop and maintain current listings of potential debris storage and reduction sites in areas prone to natural disasters. Site selection should be based on the following criteria:

- Ownership,
- Size,
- Location, and
- Environmental and historic concerns (baseline study findings).

### **Ownership**

The planning staff should consider public lands first in order to avoid costly land leases. Existing disposal or recycling facilities that are in close proximity to the disaster area are ideal locations for DMS. Nearby landfill and recycling center capacities will need to be evaluated for site feasibility. Applicant-owned sites that will not require extensive repair costs, such as parks, vacant lots, or sports fields, should be considered as well. State-to-state or county-to-county agreements may present possible solutions for public land use.

When this is not possible, the planning staff should develop criteria for identifying potential private property locations for the DMS. Private land leases will need to be reviewed by the legal staff in order to avoid extensive damage claims upon site closeout.

## **Land Lease Agreements**

The duration of the land lease agreement should be inclusive of all the time the applicant will be present at the site, beginning with the baseline environmental study and ending once the property owner takes back legal ownership.

The agreement should include a requirement to conduct a baseline environmental assessment of the site before the site is occupied and an environmental assessment before returning the property back to the owner. Both documents may become an annex to the land lease agreement.

The land lease agreement should be for a specific time frame with the ability to extend the lease if debris removal and processing activities are not completed.

## **Size**

The required size of the site will depend on the expected volume of debris to be collected and the planned volume reduction methods. The DMS can vary in size from 50 to 200 acres. Historic disasters have shown that it takes 100 acres of land to process one million cubic yards of debris. The USACE has found that approximately 60 percent of the area will be used for roads, buffers, burn pits, HHW disposal areas, etc. As a general rule, larger sites mean fewer sites are needed; hence, site closeout is easier.

## **Location**

The DMS should be in an area that does not impede the flow of traffic along major transportation corridors, disrupt local business operations or cause dangerous conditions in residential neighborhoods or schools. Whenever possible, avoid locating a DMS near residential areas, schools, churches, hospitals and other such sensitive areas.

The DMS will need good ingress/egress to accommodate heavy truck traffic. The planning staff should consider adjusting traffic signals to accommodate projected truck traffic on critical haul routes. The DMS selection criteria should consider access to major routes to allow for trucks to transport material to final disposition locations.

The planning staff will need to consider public acceptability when selecting a potential DMS. It will largely be dependent upon the activities planned for the

site. Smoke from burning, around-the-clock light and noise from equipment operation, dust and traffic are generally tolerated early in a disaster recovery operation, but may have to be curtailed later. The planning staff is strongly encouraged to notify citizens early about planned site activities and possible ramifications.

### ***Environmental Concerns***

When selecting public or private sites, pre-existing conditions should be considered because the sites will have to be restored upon site closeout. Proper management of the site will allow the site to be closed with manageable efforts. For site closure reasons, planning staff will want to keep from aggravating an existing environmental issue during the debris management operations.

Therefore, a DMS should not be established in an environmentally sensitive area such as wetlands, historical sites, critical animal and plant habitats, archeological sites, or fresh water well fields. This applies specifically to any Superfund site or an area within a 100-year floodplain. The planning staff should eliminate all sites that may have any of the listed environmental concerns during the planning process. If an environmental concern is found during the baseline data collection process (described below), the potential site should be ranked lower than others. However, if use of such areas is unavoidable, procedures for temporary waivers should be investigated and considered. *Consult and coordinate with local residents, conservation agencies, environmental groups and agencies and the State Historic Preservation Office (SHPO).*

By conducting a baseline data collection study, the planning staff is able to further establish the feasibility of potential sites, document the existing site and vet potential environmental issues. Data collection will need to be completed prior to establishing the site and continued throughout the operations. The final assessment should include the same documentation in order to avoid disagreements of the condition of the site prior to the operations and the condition in which is returned.

### **Baseline Data Collection**

Private and public land used as a DMS will need to be returned to its original condition following the end of all debris operations. Baseline data collection is essential to document the condition of the land before it is used as a debris storage and reduction site. As soon as a potential site is selected, the designated

debris manager and staff should work closely with local, tribal and state officials to develop baseline data criteria. The following actions are suggested to document the baseline data on all selected sites:

5. **Videotape and/or Photograph the Site.** Thoroughly videotape and/or photograph (ground or aerial) each site before beginning any activities. Periodically update video and photographic documentation to track site evolution.

6. **Document Physical Features.** Note existing structures, fences, culverts, irrigation systems and landscaping that can help evaluate possible damage claims made later.

7. **Historical or Archeological Investigation.** Research the property's past use and ownership to note any issues regarding historical or archeological significance. The planning staff may contact the state historical preservation agency for assistance and notification of intent prior to assuming ownership through a lease agreement.

8. **Sample Soil and Water.** Advanced planning with community and state environmental agencies can establish requirements, chain of custody, acceptable collection methods, certified laboratories and testing parameters. If in-house assets are not available, the planning staff may consider establishing a contract with an environmental consulting firm that can respond rapidly. Soil and groundwater samples should be collected prior to volume reduction activities. Planned HHW, ash and fuel storage areas should be sampled prior to site setup.

## Environmental Monitoring Program

As the operations proceed additional data should be collected throughout the operations for closeout and quality assurance reasons. The data can be compared to the previously established information in order to determine any remediation that may be necessary.

1. **Sketch Site Operation Layout.** DMS operations may grow, shrink, or shift on the site. It will be important to track reduction, hazardous waste collection, fuel, and equipment storage in order to sample soil and water for contaminants. Periodically map or sketch activity locations so that areas of concern can be pinpointed later for additional sampling and testing.

**2. Document Quality Assurance Issues.** Document contractor operations that will have a bearing on site closeout, such as petroleum spills at fueling sites; hydraulic fluid spills at equipment breakdowns; contractor installation of water wells for stock pile cooling or dust control; discovery of HHW; and commercial, agricultural or industrial hazardous and toxic waste storage and disposal.

**3. Plan Environmental Remediation.** Final restoration of the landscape must be acceptable to the landowner, but within reasonable expectations. Therefore, plan the landscape restoration as early as possible, preferably incorporating a basic plan in the lease.

## Permits

Environmental permits and land-use variances may be required to establish a temporary DMS. Several agencies may be involved in issuing permits and granting land use approvals. The planning process should identify the potential permits that will be required to establish a facility. A listing of the permits should be part of the Debris Management Plan and may include:

- Waste processing and recycling operations permit
- Temporary land-use permits
- Land use variances
- Traffic circulation plans
- Air quality permits
- Water quality permits
- Coastal commission land-use permits
- Household hazardous waste permits
- Fire department permits
- National Environmental Policy Act (NEPA) compliance

## Establishment and Operations Planning

### *Site Design*

The information gathered during the baseline data collection will become important to the design of the site. Additional concerns such as site operations and closure criteria will need to be taken into consideration when the site is designed. Many of these issues will be addressed in planning, but will be implemented after the debris-generating event occurs.

## Site Preparation

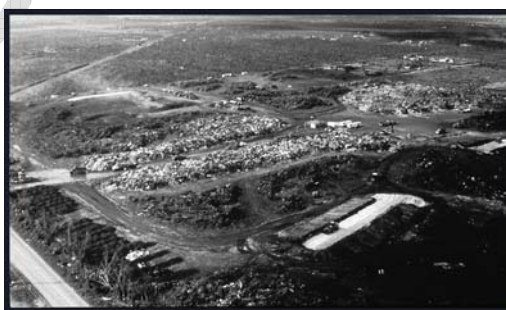
The topography and soil/substrate conditions should be evaluated to determine best site layout. When planning site preparation, the designer should consider ways to make site closure and restoration easier. For example, if the local soils are very thin, the topsoil can be scraped to bedrock and stockpiled in perimeter berms. Upon site closeout, the uncontaminated soil can be re-spread to preserve the integrity of the tillable soils. Operations that modify the landscape, such as substrate compaction and over-excavation of soils when loading debris for final disposal, will adversely affect landscape restoration.

## Site Layout

There should be no significant accumulation of debris at temporary storage sites. Debris should be constantly flowing to incinerators and grinders, or recycled with the residue and mixed construction and demolition materials going to a landfill. Additional debris management sites may be required if the actual debris quantities flowing in to the site are greater than the site storage and processing capacity. The efficiency and the overall success of the DMS operations will be partially determined by how the site will be designed.



DMS with undesired debris accumulation



DMS with little debris accumulation

### ***Operational Boundaries***

Operational boundaries are the boundaries or areas that clearly define the difference in use areas at the DMS. In establishing the operation boundaries, the DMS design staff may consider using earthen berms, temporary barriers, or any other physical restriction. This will aid traffic circulation and help keep debris amassing at the DMS to a minimum.

Common operational activities are:

- Reduction
- Recycling
- Tipping areas (unloading)
- Loading areas for processed debris to go to its final disposition
- Drop-off centers for the general public (this may include vegetative, recycling, or construction and demolition debris)
- Household hazardous waste storage
- Monitoring tower locations
- Equipment, fuel, and water storage

The separation between all of the areas listed above will need to be clearly delineated and defined. As operations proceed the lines may be moved to accommodate either growing demand for space or reducing in preparation for closure.

The reduction, recycling, tipping, and loading areas will need ample room for large equipment operations. The design should take into consideration the possibility of multiple pieces of equipment being in the same activity area at one time. Depending on the scale of operations, each debris stream may have its own tipping area and should be designed accordingly. (Reduction activity considerations are discussed in Chapter 9, *Reduction, Recycling, and Disposal*.)

General public drop-off areas for recycling, reduction, and C&D debris may be included within a DMS. These public use areas should be carefully designed for passenger vehicle traffic and public safety.

Household hazardous waste storage should be close to the public drop-off center yet restricted so that qualified personnel may process the waste appropriately. The design staff may consider constructing an impermeable lining and earthen berms in order to contain spills and prevent surface water runoff from leaving the area.

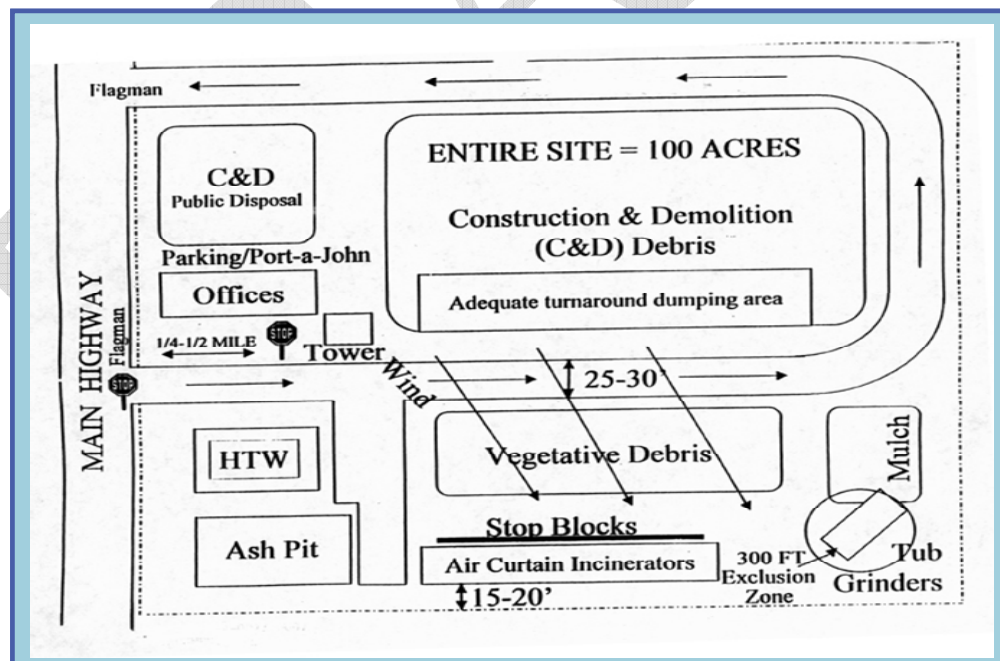


Monitoring towers should be located at ingress and egress points. Monitoring towers should be constructed of durable structural materials. The structures should be designed to withstand active and static loads. (A stepladder is not an acceptable monitoring tower.) Additional monitoring concerns and issues are discussed in Chapter 11, *Monitoring Debris Removal Contracts*.

Equipment and fuel should have a designated storage area and signs posted appropriately. The fuel storage areas will need to be designed to contain spills. Water should be readily available at all times. Water storage areas should be strategically positioned throughout the site and identified appropriately.

### **Traffic Patterns**

The traffic circulation will need to be well defined throughout the entire site. Although traffic signs and barricades aid in directing traffic the planning staff may consider flag personnel to help direct traffic. Drivers unfamiliar with the new environments, routes, and rules will need assistance in order to safely navigate through the DMS.



Sample DMS Layout

Optimally, the designed traffic pattern should allow trucks to enter and exit through different access points, as long as each is monitored. Haulers are

typically paid by the volume of a load. The load is evaluated when entering the site as a percentage of the full capacity of the truck. Stationing monitors at ingress and egress points will ensure every truck releases the entire load prior to leaving the site. This avoids debris left in a truck from a previous load from being counted again in a subsequent load.

The empty trucks that are entering the site to remove the processed (reduced) debris should enter and exit through an access point other than that of all other traffic. This will reduce the site management and debris monitor confusion regarding debris being deposited or leaving the site.

### **Site Management**

To meet overall debris management strategy goals and to ensure that the site operates efficiently, the management of the site should be under the direction of the local government.

Local governments could use in-house personnel or contracted services to manage the site. In either situation, a site manager, debris monitors, and safety personnel will be needed to ensure safe and efficient operations.

### **Site Manager**

The site manager is responsible for supervising the overall day-to-day operations, maintaining daily logs, preparing site progress reports and enforcing safety and permitting requirements during site operations. The site manager is also responsible for scheduling the environmental monitoring and updating the site layout plan. The site manager has oversight for monitoring the activities of the debris removal contractors and the onsite debris processing contractors to ensure that they comply with the terms of their contracts.

### **Debris Monitors**

Monitors should be placed at ingress and egress points in order to quantify debris loads, issue debris load tickets, inspect and validate truck capacities, check loads for hazardous wastes and perform quality control checks. The specific duties of the monitors will be dependent on how debris is collected. Chapter 11, *Monitoring Debris Removal Contracts*, includes additional information concerning monitoring roles and responsibilities.

**Safety Personnel**

Safety personnel are responsible for traffic control and ensuring that site operations are in compliance with the state and federal occupational safety regulations.

**Site Closure**

When the site operations are complete, the property must be restored to its original condition before returning the site to the property owner. Restoration of a site involves removing all traces of the operations and possible remediation of any contamination that may have taken place during the operations. The site must be brought back to its environmental state, in which it was leased, prior to it being returned to the owner.

Debris, processing equipment, storage tanks, protection berms, and other structures built on the site should be removed from the site upon completion of all debris removal and processing operations.

The final environmental site assessment is an extension of the environmental monitoring program. Similar testing completed in the baseline study will be conducted, and an initial study made to confirm the site has been returned to its pre-activity state. Test samples should be taken at the same locations as those of the initial assessment and monitoring program. However, if warranted, additional test samples may need to be taken at other locations on or off the site.

Based on the results of the testing, additional remediation may be required before the owner will take final acceptance of the site. The lease agreement should have provisions to release the applicant from future damages if the site is returned in its original condition.



## Questions to Consider

1. What are the remaining capacities of your landfills? How would you acquire this information?
2. Are there any restrictions to the types of materials that can be taken to your landfills?
3. Does the governing jurisdiction have available property that can be used as a DMS? If not, who would have the responsibility to locate a potential DMS and prepare legal lease agreements?
4. Who in your staff could manage the DMS? What staff is available to work at the DMS?
5. Will contracting additional labor and equipment be necessary to operate the DMS?



## To Do Checklist

1. Identify landfills within the jurisdiction that can be used for a DMS, final disposal or both. If landfill space is not available, what are the alternatives?
2. If it is determined that a DMS is necessary:
  - a. Perform the baseline data collection,
  - b. Have the legal staff review and obtain a lease (if private property),
  - c. Identify any outstanding environmental concerns with the site, and
  - d. Obtain all permits from the governing authority or agencies.
3. Identify the jurisdictional staff member(s) that will be responsible for the DMS operations.
4. Identify the types of operations that will be taking place at the DMS.
5. Design the DMS layout.
6. Identify how the DMS activities will be performed:
  - Force account labor and equipment and/or
  - Contract labor and equipment.
7. Develop an ongoing environmental monitoring plan while the DMS is operating. Document appropriately for potential site closure remediation.
8. Perform a final environmental data collection to ensure the property is returned as it was accepted.
9. If the DMS is leased, ensure the property is accepted by the owner without future action due to environmental contamination.

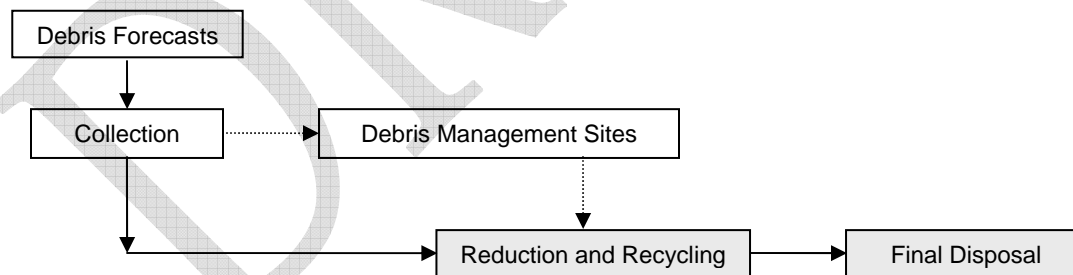
## Chapter 9

### Debris Reduction/Recycling Methods and Disposal

#### Chapter Highlights

- ◆ Methods of Reduction
  - Incineration
  - Grinding and Chipping
  - Recycling
- ◆ Final Disposition Operations
- ◆ Questions to Consider
- ◆ To Do Checklist

Based on the debris forecasting, the planning staff will have a concept of the amount and types of debris that will be collected and disposed. During this period, the staff may consider reduction and recycling methods to lower the overall cost of a debris removal operation.



Reducing and/or recycling disaster-related debris has financial and environmental advantages. These operations can reduce the overall cost of a debris removal operation by reducing the amount of material that is taken to a landfill, thereby reducing the cost of final disposition in the form of tipping fees. In the case of recycling, potential end use products for specific markets may offset the cost of operations even more. In many communities, recycling operations are an important component of the community public policy and

priority. The staff should evaluate the type of reduction methods appropriate for the anticipated debris based on different disaster scenario events.

## Methods of Reduction

The planning staff will have three main types of reduction methods to consider and use during the operations – incineration, chipping/grinding, and recycling. One method or a combination of methods may be utilized as appropriate, depending on the type and anticipated volume of debris.

### Incineration

Burning vegetative debris is a popular reduction method, since it has up to a 95 percent reduction rate. Local agricultural extension personnel should be consulted to determine if the resulting ash can be recycled as a soil additive. This option should be terminated if mixed debris enters the waste stream.

The incineration process requires a minimum of three steps, illustrated below.

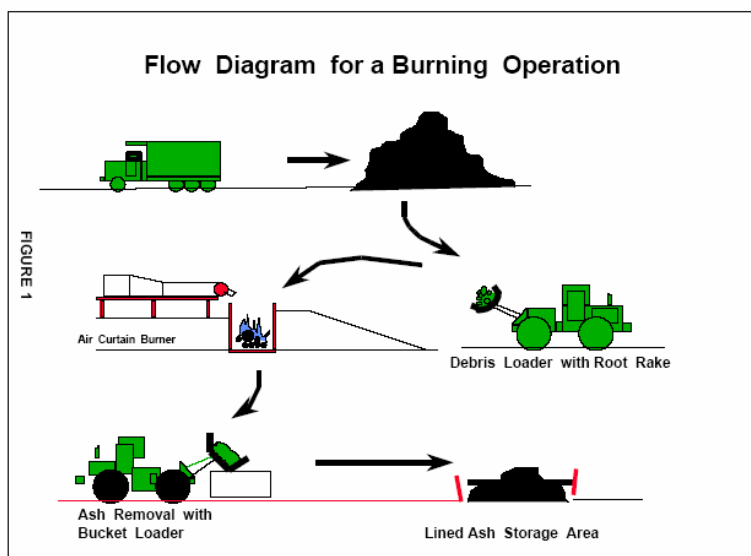


Figure 1

There are several incineration methods available for volume reduction.

**Uncontrolled Open-Air Incineration** is when debris is reduced with no control over how much or how quickly it is allowed to burn. It is the least desirable method of volume reduction because it lacks any type of environmental control. Local officials and/or independent landowners may employ this method early in a disaster to make progress quickly. However, if circumstances dictate that open

air burning is the only option for managing debris, the local government should conduct environmental impact assessments and implement control measures to limit impacts to humans and the environment. This reduction method should be closely monitored to ensure that only clean woody debris is incinerated.

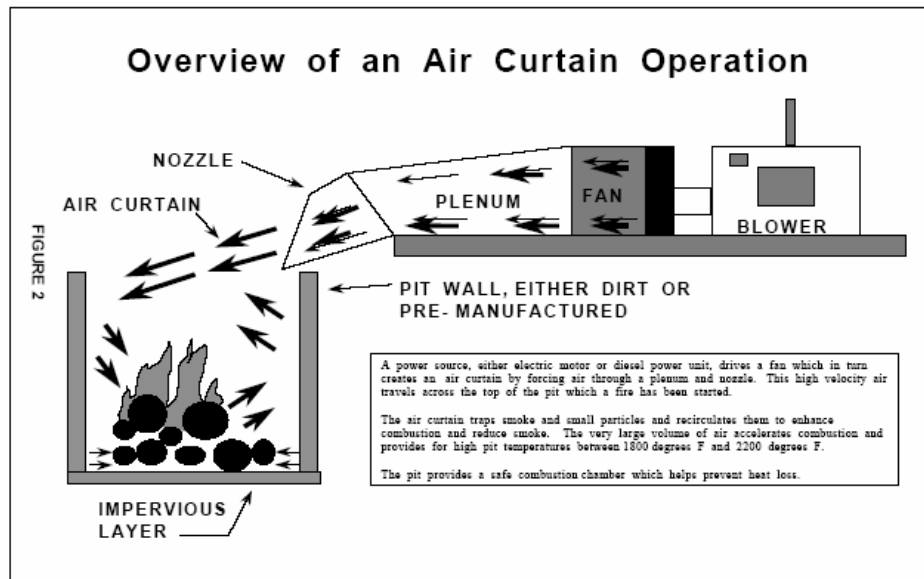
**Controlled Open-Air Incineration** carefully reduces vegetative debris by burning debris within a contained fixed area. The reduction of clean woody debris presents little environmental damage and is cost effective.

**Air Curtain Pit Incineration** offers an effective means to expedite the volume reduction process while substantially reducing the environmental concerns caused by open-air incineration. The air curtain incineration method uses a pit constructed by digging below grade or building above grade (if a high water table exists) and using a blower unit. The blower unit and pit comprise an engineered system that must be precisely configured to function properly.

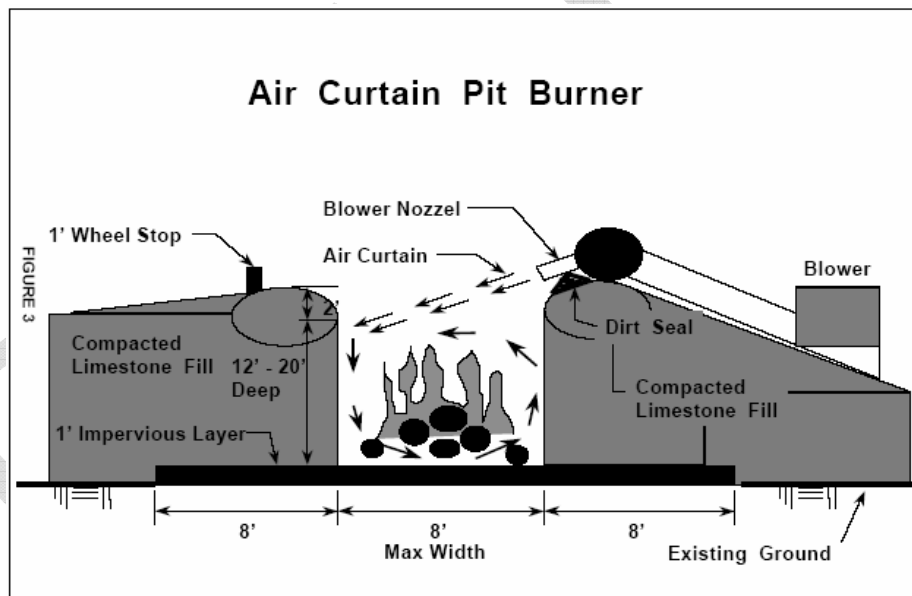
The burning chamber is usually no more than eight-feet-wide and nine- to 14-feet-deep. The length of the pit varies depending on site size, environmental permitting and labor/equipment limitations. The design of a successful air curtain incinerator used in past disasters is included to follow.

It is important to note that there are no industry standards for air curtain pit design. The local government should seek contractors that are knowledgeable and experienced with air curtain pit incinerator design and operating procedures when soliciting contractors to perform incineration services.





Below-grade Air Curtain Operation



Above-grade Air Curtain Operation

This is provided only for reference and planning use. The planning staff should research and solicit qualified contractors to properly design and train all personnel that may be operating or maintaining this process.

**Portable Air Curtain Incinerators** use the same methods as air curtain pit incinerator systems, except that the portable incinerators use a pre-manufactured pit rather than an onsite constructed earth/limestone pit. Portable air curtain

incinerators are the most efficient incineration systems available because the pre-manufactured pit is engineered to precise dimensions to complement the blower system. The pre-manufactured pit requires little or no maintenance as compared to earth or limestone constructed pits, which are susceptible to erosion. Portable air curtain units are ideal for areas with high water tables and sandy soils and areas where smoke capacity must be kept to a minimum.

### **Environmental and Safety Concerns**

With all of the incineration methods, environmental compliance and safety concerns need to be addressed within the plan. The planning staff must check with appropriate state agencies for state-specific requirements. The following are setback, permitting, and public information suggestions to be included within the plan.

Setbacks and buffer zones need to be established within and around the reduction sites not only for the public safety but also for the safety of the debris operations. A setback of at least 100 feet should be maintained between the debris piles and the incineration area. It is often suggested that 1000 feet be allowed between the incineration area and the nearest building in order to create a generous buffer zone for emergency vehicles, if needed. The fire should be extinguished two hours before anticipated removal of the ash mound. The ash mound should be removed before it reaches two-feet below the lip of the incineration pit. To prevent explosions, hazardous or contaminated flammable material should not be placed in the pit. Finally, fencing and signage are simple and effective means to keep the public away from the incineration area.

Smoke generated by any of the above incineration methods is often interpreted by the general public as having an environmental impact. Therefore, it is important to also address smoke as part of the air monitoring guidelines. The governing state environmental or forestry agency will have guidelines that will need to be met in order to acquire and keep a burn permit.

Planners should take the initiative in keeping the public informed. Local officials, environmental groups and residents should be thoroughly briefed on the incineration methods being used, how the systems work, environmental standards, health issues and the risks associated with each type of incineration. A proactive public information strategy should be included in any operation that uses incineration as a primary means of volume reduction.

## ***Chipping and Grinding***

The second most common type of reduction method is to chip or grind disaster-related debris. Vegetative debris is the most common material reduced by using this method. The planning staff may employ chipping and grinding methods in reducing rubber and some metals prior to being shipped to the recycling facility. The planning staff will have to investigate the opportunities, economics, and equipment in order to determine if this reduction method is appropriate for its jurisdiction.

The cost of chipping and grinding is basically equal to that of incineration; however, there are significant differences in volume reduction. Incineration, for example, reduces the volume by approximately 95 percent, leaving only an ash residue for disposal. Chipping and grinding reduces the volume by 75 percent. Since 25 percent of the volume remains from chipping and grinding, the benefit of this reduction method can be increased by identifying alternate uses of the residual material. The ability to use recycled wood chips as mulch for agricultural purposes, as fuel for industrial heating, or in a cogeneration plant helps to offset the cost of the chipping and grinding operation.

If the grinding operation is strictly for volume reduction, size of the mulch is not important; however, mulch to be used for agricultural purposes must be of a certain size and virtually free of paper, plastic and dirt. Because of shallow topsoil conditions in some locations, mulch is a desirable product. In other locations, however, the mulch may become nothing more than a landfill product. The designated debris manager and planning staff should work closely with local environmental and agricultural groups to determine if there is a market for mulch.

Plastics should be eliminated completely. To help eliminate contaminants, root rake loaders should be used to feed or crowd materials to the chipper or grinder. Hand laborers should remove contaminants prior to feeding the grinders.

Bucket-loaders tend to scoop up earth, causing excessive wear to the grinder or chipper. Shaker screens should be used when processing stumps with root-balls or when large amounts of soil are present in the woody debris. The separated soil can also be recycled back to the agricultural community.

## **Grinding Equipment**

Grinders are ideal for use at debris storage and reduction sites because of their high volume reduction capacity. However, a large area is needed to hold the resulting mulch. Chips or mulch should be stored in piles no higher than 15 feet and located so as not to hinder hauling operations. Properly locating the grinders is critical for noise and public safety considerations.

There are numerous makes and models of grinders and chippers on the market. Tub-grinders have production rates ranging from 160 to 340 cubic yards per hour for brush and yard waste. Manufacturer published grinder production logs can be misleading because they reflect only the engine hours and ideal rate of production. These production logs do not take into account personnel monitoring or consider various debris conditions. Production rates should be verified by monitoring operations.

The reduced debris production output should average 100 to 150 cubic yards per hour when debris is moderately contaminated with plastic and dirt and feeding operations are slow. When the debris is relatively clean, the production rates can increase up to 250 cubic yards per hour.

Brush chippers can be hauled or towed to the site of the downed vegetation and are ideal for use in residential areas. Damaged and uprooted trees present significant problems if they are pushed to the right-of-way to wait for eventual pick-up and transport to storage and reduction sites. The brush chippers allow the downed trees and limbs to be reduced in place. The use of on-site chippers also allows the material to be used as mulch in the area where it is chipped, thereby saving the cost of transporting it.

## **Recycling**

Based on the debris management goals and objectives, the decision to recycle disaster debris should be made during the planning process. The planning staff may find that marketing and selling the reduced debris is more financially attractive than hauling the unreduced debris to a local landfill.

Processing disaster debris through grinding, shredding or any other means without an understanding of the end-uses and market specifications may result in the products becoming unusable for its intended purpose and the debris will need to be disposed of. For that reason, it is incumbent upon local governments

to thoroughly research the market opportunities and establish criteria to assist emergency personnel in making decisions to recycle certain types of debris.

Debris management plans should include a list of the types of debris materials that can be recycled. The plans should determine end-use products that can be made from disaster debris, the market demand for each product, identify the product buyers, and when feasible, secure the sales of those products prior to an event.

The Debris Management Plan will need to detail the implementation of the appropriate processing technique to achieve the desired end-product. If local governments use contracted services to process debris, the contract agreements should include the processing specifications so that the contractor uses the correct types of equipment to achieve that specification.

Hurricanes and earthquakes may present opportunities to contract large-scale recycling operations and achieve an economic return from some of the prime contractors who exercise their initiative to segregate and recycle debris as it arrives at the DMS or landfill.

Specialized contractors should be available to bid on disposal of debris by recycling, if it is well sorted. Contracts and monitoring procedures should be developed to ensure that the recycling contractors comply with local, tribal, state and federal environmental regulations.

### **Common Recyclable Materials**

#### ***Metals***

Hurricanes and tornadoes can cause extensive damage to mobile homes, sun porches and green houses. Most of the nonferrous and ferrous metals are suitable for recycling. Metal maulers and shredders can be used to shred trailer frames, trailer parts, appliances and other metal items. Ferrous and non-ferrous metals are separated using an electromagnet and then sold to metal recycling firms.

#### ***Soil***

Landslide debris removal operations may include transporting large amounts of soil from the slide area to the DMS. At the DMS, it is combined with other organic materials that will decompose over time. This procedure can produce

significant amounts of soil that can be sold, recycled back into the agricultural community, or stored on-site to be used as cover.

In agricultural areas where chemical fertilizers are used heavily, recovered soil may be too contaminated for use on residential or existing agricultural land. It may be necessary to monitor and test the soil to ensure that it is not contaminated with chemicals. If the soil is not suitable for any agricultural or residential use, it may be deemed suitable for use as cover material at a landfill.

### ***Concrete, Asphalt and Masonry Debris***

Concrete, asphalt and masonry products can be crushed and used as base material for certain road construction products or as a trench backfill. Debris targeted for base materials will need to meet certain size specifications as determined by the end user.

## **Final Disposition Operations**

The planning staff will need to identify the final disposition site of whole, reduced, or recycled debris. The most cost-efficient measure is to determine available space in applicant's own or normally utilized landfills. The available space will often determine the most appropriate type of reduction method to employ. If local landfills are not adequate, the staff should conduct a search of landfills close to the disaster area for disposal.

County-to-county agreements are sometimes used in order to achieve an equitable solution. Some county landfills do not accept waste from other areas, and may have stringent rules regarding what can be brought into the landfill.

The landfill's tipping fee cost structure will become important to the planning staff, especially if debris is being taken to a neighboring county. Tipping fee cost structures include operating and maintenance costs; permitting fees; capital improvement costs and taxes. The capital improvement costs may be directly for the landfill itself or it may be fees for projects within the county.

Some fees and taxes may be waived for a neighboring governing body. The planning staff will need to investigate and compare the fees that are truly applicable for its debris disposal plans.



### Questions to Consider

1. Do you have a plan for reduction?
  2. Do you currently have a recycling plan? Is the jurisdiction considering a recycling plan?
  3. Which agency within your jurisdiction would be responsible for developing and implementing a recycling plan?
  4. What departments within your agency would be responsible for permitting burning or incineration operations?
- 



### To Do Checklist

1. Identify potential end-use of the reduced or recycled materials. Identify if the end use materials may be a potential income to offset processing or be no cost to dispose.
2. Identify reduction and recycling methods that will be used at the DMS.
3. Identify how the reduction and recycling activities will be performed:
  - a. Force account labor and equipment, or
  - b. Contract labor and equipment

## Chapter 10

### Contracted Services

#### Chapter Highlights

- ◆ Common Misconceptions
- ◆ Procurement Considerations
- ◆ General Contract Provisions
- ◆ Types of Contracts
  - Unit Price
  - Lump Sum
  - Time and Material
  - Ineligible Contracts
  - Contract Matrix
- ◆ Questions to Consider
- ◆ To Do Checklist

This chapter will reference information in Chapter 11, *Monitoring*.

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The planning staff may find it necessary to contract for debris removal services if the magnitude of the disaster is beyond the capabilities of its force account resources, state resources, mutual aid agreements, volunteer labor and equipment. Possible contracted services include:

- Collection, including clearance during response,
- Reduction or Recycling,
- Hazardous waste handling, processing, and disposal,
- Hauling to final disposition,
- DMS activities,
- Demolition, and/or
- Monitoring.

The applicant's contracting/procurement and legal staff will have a major role in this planning component of the Debris Management Plan. The staff should use



the Debris Management Plan development as an opportunity to familiarize themselves with their contracting components particularly with regard to emergency services. In procuring and awarding these contracts, the applicant should follow its normal procurement and contracting procedures.

## Common Misconceptions

Contracts written by contractors often use the FEMA name in order to gain credibility and give the appearance that the work to be performed would be eligible for PA grant funding. Applicants should be aware of the common phrases and why these statements are false. Three of the most common include:

1. **“FEMA approved contract and rates”** – FEMA does not certify, credential, or recommend contractors.
2. **“FEMA eligibility determinations”** – Debris contractors do not have the authority to make eligibility determinations. Only FEMA can make an eligibility determination.
3. **“FEMA training in eligibility, documentation, and Project Worksheet development provided”** – These services will often have a fee attached. Most of the training and information offered by a contractor is available free from FEMA or the state.

Applicants may enter into any contracts they wish. FEMA is not bound to any contractual obligations since it is not a party to those contracts. Applicants are strongly encouraged to work with state emergency management staff and FEMA to ensure compliance with the provisions of the PA program, as well as other applicable statutes and regulations, if the applicant plans to seek grant assistance under the PA program. The applicant is responsible for payment of contracted services regardless of whether or not such services are eligible for PA grant funding. If a contract is in-place prior to the applicant’s meeting with FEMA PA staff, the terms of the contract still need to be discussed to ensure compliance. The applicant will find it easier to provide FEMA with all the necessary documentation for PA grant funding and therefore receive reimbursement for eligible costs in a timely manner.

FEMA has prepared a Fact Sheet to assist applicants in developing contracts in order to comply with the PA program requirements. *Fact Sheet 9580.201, Debris*

*Removal - Applicant's Contracting Checklist*, provided in *Appendix F*, outlines contracting issues of interest to the planning staff.

There are two main areas of the contract that the staff will want to review in the contract development planning process. These include procurement procedures and general contract provisions. Other provisions and terms will be determined by the type of contract being employed for a specific service.

## Procurement Considerations

When an applicant applies for a PA grant to pay for contracted services, its procurement procedures are subject to review for compliance with 44 Code of Federal Regulations, Part 13. Legal staff may review the applicant's procedures in order to comply with these requirements outlined in Chapter 2, *Costs* and the 44 CFR Part 13 published online at [www.ncem.org/mitigation/library/44\\_CFR-Part13.pdf](http://www.ncem.org/mitigation/library/44_CFR-Part13.pdf).

In the past, some applicants risked losing PA program funding when they overlooked their procurement procedures in the interest of time and urgency. There are methods by which applicants can expedite the procurement process without jeopardizing potential grant funding. An applicant may use one or more of the methods described below to best serve its jurisdiction.

- **Pre-drafted contracts** – Applicants may draft a contract prior to a disaster event. Once the extent of the disaster is known, the contract can then be finalized with the appropriate scope-of-work and advertised in a timely manner.
- **Pre-qualified contractors** – Typically, contractors must meet minimum requirements, such as insurance, bonding, and licensing, prior to being awarded a contract by governmental jurisdictions. Applicants may advertise a Request for Qualifications (RFQ) for contractors to establish their company as a credible candidate for a contract award. If a contract is to be solicited, the pre-qualified contractors can focus on developing costs, rather than assembling documentation in order to qualify for bidding. The pre-qualified contractors on the list are invited to bid on a contract.
- **Pre-award contracts** – The applicant may choose to solicit bids and award contracts in non-disaster times, in order to advertise and evaluate

proposals during normal operations. This will allow the applicant to respond as quickly as possible after an event.

It is important to note that many times the Governor may waive contracting procedures due to the emergency. This does not necessarily mean that competitive proposals are no longer required. *Fact Sheet 9580.4, Debris Operations – Clarification of Emergency Contracting vs. Emergency Work*, provided in *Appendix E* explains that emergency contracting procedures, provided in 44 CFR Part 13.36(d)(4)(i)(B)), does not exclude applicants from competitively bidding debris removal operations.

## **General Contract Provisions**

The PA program does not have specific provisions that are required within all contracts; however, to protect the applicant's interests and document reasonable costs, specific items should be included as a means to reduce and resolve conflicts during operations and grant assistance application. These items include basis of payment, anticipated period of performance, work performance clause, termination of convenience, and the applicant's conflict resolution process.

The basis of payment and the payment process should be clearly outlined for the contractor's reference and use during operations. Contractor payments should be based on verification of completed work, and the required information for the payment request should be included within the provisions of the contract. Weight to volume conversion factors should be published in order to further clarify possible differences between invoices and payment.

Applicants may consider using a payment request similar to the PA program documentation requirements. In doing so, the contractor-provided documentation may be used as a resource in writing the applicant's PA grant.

An additional method in reducing misunderstandings and managing expectations is to state the anticipated period of performance within the solicitation and contract. This will enable the contractor to more accurately assess his resources for bidding purposes. Firm bid proposals coupled with a clear scope-of-work will reduce disagreements between the applicant and contractor.

The contract should contain a work performance clause that will allow the applicant to terminate the contract if the contractor is not completing the work as

specified by the contract. The applicant should allow the contractor to correct performance prior to using this provision. This clause should be specific in the reasons for termination and require documentation of cause for termination and the contractor's response.

Under 44 CFR Part 13, the applicant is required to include a termination for convenience clause in the contract to allow the applicant to end the services when they are no longer needed. Termination for convenience would occur as provided in these regulations.

Applicants are encouraged to include a conflict resolution process within the provisions for cases when differences do occur. If the applicant does not have a normal conflict resolution procedure, the planning staff may enlist its legal counsel for guidance.

## **Types of Contracts**

There are several types of contract agreements that can be used for debris operations. The most common types of contracts are Unit Price, Lump Sum, and Time and Material. Due to the use and structure of a specific type of contract, there are specific provisions and documentation considerations that should be included to keep costs reasonable and to protect the applicant's interests. Along with descriptions of types of contracts, the specific provisions, monitoring and documentation considerations are discussed below and included in a summary on pages 107 - 108. More specific monitoring requirements are discussed in Chapter 11, *Monitoring Debris Removal Contracts*.

## **Unit Price Contract**

### **Structure and Use**

The pay structure of unit price contracts is based on a set cost for a specific task. For example:

Remove, haul, and dispose of vegetative debris = \$X/cy

or

Remove and dispose of refrigerant = \$Y / appliance.

Unit price contracts are used when the individual work tasks are known but the total amount of work cannot be quantified. The quantities of work to be completed are estimated and included in the specifications for the contractor's bidding purposes and to establish a total contract price. Units can be expressed in terms of weight, volume, or any other quantifiable unit.

The scope-of-work may be adjusted when a more accurate quantity is established. This usually happens when debris operations are fully engaged and the true extent of the disaster is realized. In order to keep the price of the contract reasonable, the applicant can eliminate as many variables as possible by including detailed specifications and monitoring the contract operations.

### **Contract Provisions**

Developing specifications for unit price contracts requires a full understanding of all the particular tasks that will be required to complete the work to the applicant's satisfaction. Local governments should clearly define the individual tasks and activities that will be required to accomplish the scope-of-work when soliciting bids. These may include the collection, transportation, and incineration, extraction of refrigerants, grinding of debris or special handling of hazardous wastes.

The estimated quantities of each type of debris that will be collected and clear descriptions on how each is to be handled or processed should be included in the specifications. The solicitation should incorporate special sections for hazardous and special wastes, if applicable. If the local government intends to market

processed debris for certain end uses, the bid specifications should describe the end user's product specifications in detail.

Solicitation of bids should include how the contract will be monitored and the applicant's payment process.

See Chapter 11, *Monitoring Debris Removal Contracts*, for specific information regarding the load ticket systems.

### **Lump Sum Contracts**

#### **Use and Structure**

Lump sum contracts are used when the scope-of-work can be easily identified and quantified. These bid requests include a set of specifications that have a well-defined scope-of-work for a finite amount of time. For example:

Haul 250 tons of mulched debris from 1000 N Debris Road to applicant landfill at 3450 S Main Street = \$XX,YYY.

The advantage of a lump sum contract is that the total price for the specified work is known at the time the bids are opened.

#### **Contract Provisions**

Although contractors usually will present one total price in their bids, local governments should request a breakdown of costs for each item of work activity in the bid specifications so that if additional work is necessary during the term of the contract, the local government can easily determine the cost for that work based on the unit cost. By requesting unit costs, the local government can determine whether the contractor included costs for contingencies in the fixed price and if all costs are reasonable.

The bid specifications for a lump sum contract will take more effort to write in comparison with other methods, but may reduce change orders during the contract's execution. The specifications should include every work activity that will be required, the exact quantity of debris to be removed or the specific number of passes that will be required, to collect all debris.

If recycling is part of the scope-of-work, the bid specifications should include a list of debris materials that are expected to be recycled. The contract should also specify who owns the recycled materials and how the revenue from the sale of the recycled materials will affect the contract cost.

Additional monitoring suggestions and parameters are included in Chapter 11, *Monitoring Debris Removal Contracts*.

### ***Time and Material Contracts***

#### **Use and Structure**

A typical use of time and material contract is during the response phase of the debris removal operations, when an applicant has exhausted all of its own resources and requires additional labor and equipment to clear the debris. A time and material contract establishes hourly rates for labor and equipment that will be used to perform specific tasks. For example:

Backhoe, with loader, 1 cy bucket, with operator = \$50/hr

The contractor is paid based on the actual time spent to perform specified tasks and for the usage of equipment. The contractor is also paid for the actual cost of materials that are used during operations.

#### **Contract Provisions**

Solicitation for a time and material contract should include descriptions of the types of work items that would be required, inclusive of debris removal, debris processing and recycling.

Normally a time and material contract will identify the classification of each worker and a skill level. The equipment rate schedules will list the type of equipment and the hourly rate. The hourly rates for equipment should include the operator, fuel and maintenance costs. A provision should state that the applicant will pay only for the time the equipment is in operation. Mobilization and standby costs should not be invoiced at the hourly equipment rate. (Note: the PA grant does not fund equipment standby or idle-time costs.)

Local government should limit the maximum number of hours the contractor can work or set a ceiling for the contract to control costs when using a time and

material contract. FEMA limits the PA grant reimbursement cost of a time and material contract to 70 hours of actual work. FEMA may provide a grant for a time and material contract that had been extended for a short period of time, but only under extreme extenuating circumstances.

Time and material contracts are usually terminated once the maximum number of hours or price cap is reached. Contract provisions should include the applicant's right to terminate a contract at its discretion. An applicant should terminate the time and material contract when a more cost-effective contract is awarded for the remainder of the debris removal operations.

Time and material contracts are the least preferred among contracts, and typically used only for initial emergency work. Again, FEMA generally limits reimbursement of time and material contracts to the first 70 hours of actual work. The use of a time and material contract for longer than 70 hours may impact the amount of reimbursement the applicant receives.

Additional monitoring suggestions and parameters are included in Chapter 11, *Monitoring Debris Removal Contracts*.

### ***Ineligible Contracts***

FEMA considers some types of contracts ineligible for PA grant funding; therefore, they will not be discussed within this document. FEMA ineligible contracts include:

- Sole source,
- Cost plus a fixed fee, and
- Cost plus a percentage of cost.



## Contract Matrix

A summary of the above contracts and the associated characteristics is provided below as a reference.

Unit Price Contract Summary Matrix						
Type of Contract	Structure and Use	Required Provisions	Advantages	Disadvantages	Monitoring	Documentation
UNIT PRICE	Uses construction units (cubic yards, tons, each) and prices to develop line item costs and total contract costs	Specific documentation requirements, such as a load ticket system, for applicant review, payment, and ultimately PA reimbursement	Scope-of-work may be adjusted easily at a known cost	Possibility of contractor fraud if operations are not closely monitored	Intense	Load ticket system
	Used when scope-of-work is difficult to quantify. The proposals are based on applicant estimated quantities		Accurate account of actual quantities when work is complete	Trucks will require measurement and loads accurately documented		Monitors at collection point and where the raw debris is unloaded (DMS or final disposition)
			Simplicity of contract encourages competition	Segregated curbside collection may complicate the scope of work		
			Low risk for contractors			

Lump Sum Contract Summary Matrix						
Type of Contract	Structure and Use	Required Provisions	Advantages	Disadvantages	Monitoring	Documentation
LUMP SUM	All Lump Sum	Establishes a fixed contract price by a one-item bid from the contractor  Used when the scope-of-work is clearly defined by the applicant, including quantity, type and location of debris	Specific requirements for a change order request, such as exact quantity of debris, mix, or locations has changed  Cost is established at the bid opening  Easy to determine when the work is complete	Scope-of-work must be very specific to avoid change orders  Often difficult to quantify what debris will be brought to the right-of-way for collection.	Minimum	Amount of debris collected, reduced/ recycled, and disposed will be required to establish reasonable price
	Collection - Area Method	Used when a well defined area can be provided for bidding purposes		Scope-of-work has to be accurately quantified to minimize change orders  Estimating the amount of debris to be brought to the right of way difficult to determine  High probability of change orders if estimates are based on speculation	Minimum	
	Collection - Pass Method	Defines how many times a curbside collection will be completed on a particular street or through a well defined area	Possibility of fewer change orders since the scope of work is better defined  Average management duties	Up-to-date street information and plans to be included in the scope-of-work  Active public involvement to place only eligible place debris at the curb and participation in segregating materials  Intense public information campaign		

Time and Material Contract Summary Matrix						
Type of Contract	Structure and Use	Required Provisions	Advantages	Disadvantages	Monitoring	Documentation
TIME AND MATERIAL	<p>Labor and equipment billed as work is completed.</p> <p>A known quantity of work is not established prior to the contractor beginning work</p>	<p>Capped by the period of performance and/or monetary ceiling</p> <p>Price for equipment applies only when the equipment is operating</p> <p>Hourly rate for equipment includes fuel, maintenance, and repair</p> <p>Bids should include all overhead costs</p> <p>Specific hours the contractor is to perform work (To ensure monitor staff is present to document activity)</p> <p>No guarantee for a minimum number of hours</p> <p>If multiple contracts are awarded the period of performance should run concurrently rather than consecutively</p>	<p>Good for Response activities</p> <p>Extremely flexible, not limited by a specific scope-of-work</p> <p>Range of uses, appropriate clearance of major access routes or roads to critical facilities</p>	<p>Requires close contractor oversight and direction as what work to perform</p> <p>Requires documentation of actual hours worked by equipment and operators</p> <p>Reasonable hourly rates may be difficult to establish if not competitively bid</p> <p>Equipment specifications may have to be generalized in order to encourage competition</p> <p>Requires full time trained monitors to document work completed and verification of hours worked</p>	Intense	<p>Intense</p> <p>Actual labor and equipment must be accounted for entire performance period</p>



### **Questions to Consider**

1. Do you have in-place debris contracts prepared?
2. Do you have a list of local pre-qualified contractors?
3. Can you use components of existing contracts, such as garbage collection or roadway time and equipment contracts for disaster debris clearance, removal or disposal?
4. What departments within your agency would be required to prepare the debris management bid documents and contracts?



## To Do Checklist

1. Review and revise all procurement procedures. For PA grant funding the contracts must comply with 44 CFR Part 13.
2. Identify the types of contracts that will be potentially used for collection, reduction, and recycling, monitoring, and final disposal
  - a. Unit Price
  - b. Lump Sum
  - c. Time and Material
3. Review and update all contracts for editing and quick solicitation after a disaster.
4. Pre-qualify contractors for expediting contracts processing.
5. Review all responses for reasonable cost considerations.
6. Assemble all requests for qualifications, request for proposals, bid solicitations, bid tabulations, and contracts for the PA grant considerations. An explanation of reasonable cost may be requested from FEMA if the response to solicitations does not generate a competitive field of bidders.

## Chapter 11

### Monitoring Debris Removal

#### Chapter Highlights

- ◆ Debris Monitor Staff
    - Force Account Labor
    - Outsourcing Monitoring Duties
  - ◆ Debris Monitor Roles
  - ◆ Monitoring Methods for Debris Removal
    - Debris Monitor Reports
    - Truck Certification List
    - Load Ticket System
  - ◆ Special Monitoring Issues
    - Equipment
    - Monitoring Tips
  - ◆ Questions to Consider
  - ◆ To Do Checklist
- 

Debris monitoring procedures should be established and included in the Debris Management Plan for the applicant's financial interests, especially if the applicant has contracted for any component of the debris removal operation.

Monitoring debris removal operations achieves two objectives:

- Verify that the work completed by the contractor is within the contract scope-of-work, and
- Provide the required documentation for PA grant reimbursement.

Failure to document eligible work and costs may jeopardize PA grants. In federally declared disasters, FEMA will periodically validate the applicant's monitoring efforts to ensure that eligible debris is being removed and processed efficiently.

*Only FEMA has the authority to make eligibility decisions; contractors cannot make eligibility determinations. Information on eligibility can be found in this guide, the Public Assistance Policy Digest, the Public Assistance Applicant Handbook and the Public Assistance Guide.*

## **Debris Monitor Staff**

Applicants can use force account resources, contractors, or a combination of both to monitor debris removal operations.

### **Force Account Resources**

Applicants are encouraged to use their own employees to monitor debris removal operations. The applicant's employees are the most familiar with the jurisdiction and know the priorities of the applicant's Debris Management Plan. The force account employee cost will be reimbursed based on the PA program's labor cost policies for emergency work.

### **Outsourcing Monitoring Duties**

In some cases the monitoring task is outsourced to a contractor. As with any contractual arrangement, the client must ensure that the contractor is meeting the performance requirements of the contract. If a contractor is hired to perform a monitoring task the applicant is required to ensure that the hired contractor performs satisfactorily.

If the applicant out-sources a monitoring task, the contract must be awarded to a contractor who has no vested interest in the debris removal contract or contractor. There must be no conflict of interest between the monitoring contractor and the debris removal contractor.

When soliciting for debris monitoring contracts, the advertisement should outline the required qualifications of debris monitors. The qualifications should be appropriate for the individual responsibilities and duties. Debris monitors should have experience working on construction sites and be familiar with safety regulations, but it is not necessary to have professional engineers and other certified professionals perform these duties. Primarily, debris monitors should be able to estimate debris quantities, differentiate between debris types, properly fill out load tickets, and follow all site safety procedures.

The specifications should outline possible monitoring locations and reporting requirements to document eligible debris quantities.

Monitoring contracts are typically time and material and should contain a **not-to-exceed** clause per the requirements of 44 CFR Part 13. The applicant should ensure the level of monitoring and overhead claimed is consistent with the level of effort required to effectively monitor the debris removal operation.

It is important that the debris monitor's contract provide for submission of reports and payment estimates to help promote efficiency and effectiveness in the overall debris removal operation. By continuously monitoring the debris removal operations, an applicant can track progress toward completion and determine the financial status of the monitoring and debris removal contracts.

Applicants should require debris monitors to submit the following reports:

- Debris collected from curbside and/or collection centers,
- Debris accepted at the DMS and/or final disposition,
- Debris recycled/reduced at the DMS and taken to final disposition, and
- Any operational or safety issues.

If FEMA provides funding for the debris monitor's contract, it will require a sample of the reporting requirements outlined in the contract in order to substantiate eligible costs. The sample must be adequate to demonstrate that sufficient measures were taken to ensure that eligibility and accurate quantities were reported as part of the grant. If the monitoring contract is time and material, the applicant must supply labor, equipment and material records to the PA representative in order to substantiate the actual costs of the grant.

## Debris Monitor's Role

Monitoring operations are meant to ensure that the debris removal contractor is performing the scope-of-work required by the contract, and to document the debris removal operations. The primary role for debris monitors is to document the location and amount of debris collected.

The key elements of information that are needed to verify the contractor's scope-of-work and determine eligibility are:

- The type of debris,
- The amount of debris collected, and
- The original collection location.



From this information the applicant can document eligible location and work completed, as required by the PA grant program.

The debris monitor's roles and responsibilities in the field include:

- Measure and certify truck capacities (recertify on a regular basis);
- Complete and physically control load tickets (in tower and field);
- Validate hazardous trees, including hangers, leaners, and stumps (use appropriate documentation forms);
- Ensure that trucks are accurately credited for their load;
- Ensure that trucks are not artificially loaded to maximize reimbursement (e.g., debris is wetted, debris is fluffed - not compacted);
- Ensure that hazardous waste is not mixed in loads;
- Ensure that all debris is removed from trucks at the DMS;
- Report to project manager if improper equipment is mobilized and used;
- Report to project manager if contractor personnel safety standards are not followed;
- Report to project manager if general public safety standards are not followed;
- Report to project manager if completion schedules are not on target;
- Ensure that only debris specified in the scope-of-work is collected and identify work as potentially eligible or ineligible;
- Monitor site development and restoration of the DMS; and
- Report to project manager if debris removal work does not comply with all local ordinances as well as state and federal regulations.

The applicant is responsible for ensuring that applicant-managed debris removal work (either force account or contract) being funded through PA grants is eligible in accordance with PA.

Applicants may request State/FEMA assistance with debris monitoring or monitor training.

## **Monitoring Methods for Debris Removal**

Additional documentation requirements will depend on how the debris is collected and processed. The following discussion describes methods and systems to monitor and document work completed by force account labor and contractors.

The planning staff should develop tools for their documentation duties. It is suggested that all three tools be used to document all types of debris removal contracts – unit cost, lump sum, or time and material contracts.

### ***Debris Monitor Reports***

Applicants should develop a debris monitoring report to make all reporting documents consistent regardless of who performs the work. An example of a debris monitor's report is supplied in *Appendix K*. Applicants are not required to use this report; however, they should have a reporting document that captures the types of information that are required if seeking PA reimbursement.

The debris monitoring report is important for monitoring time and material contracts that may be used during the response phase of the operations.

Monitoring documentation for time and material contracts includes:

- Actual labor hours worked,
- Actual equipment hours operated, and
- Type and specification of equipment used.

The labor and equipment summaries supplied in *Appendix C*, are often used by applicants as a starting point for their specific documentation needs and contract requirements.

### ***Truck Certification List***

A truck certification list allows the monitor to identify the truck itself and its hauling capacity in a standardized manner. It is important to know the truck hauling capacity since debris, specifically vegetative debris, is often hauled and billed by volume. The standard list of requirements includes:

- Size of hauling bed in cubic yards,
- License plate number,
- Truck identification number assigned by the owner, and
- Short physical description of the truck.

Monitors may need to be trained to measure truck capacities for certification purposes. Re-certification of the hauling trucks on a random and periodic basis should be implemented for contract compliance and reimbursement considerations.

***Load Ticket System***

A load ticket system tracks the debris from the original collection point to the DMS or landfill. By positioning debris monitors at each point of the operation (collection, DMS, or final disposition), the eligible scope-of-work can be properly documented. This is how the applicant documents and tracks the debris from the initial collection location to the DMS or final disposal location. If the applicant uses a contract hauler, this ticket often verifies hauling activities and is used for billing purposes.

Traditionally, load tickets have been carbon paper tickets with at least four copies generated for one load of debris. More advance tracking tools have been developed and used in the field to reduce human error and expedite funding. These computer-based systems often include the same information as a traditional load ticket. The term “load ticket” refers to the primary debris-tracking document.

Each monitor is responsible for populating specific areas of the load ticket. The following table lists the load ticket information and the portions of the ticket to be completed by the respective monitor.

Load Ticket Information	Monitor Ticket Responsibilities	
	Collection Point Monitor	DMS or Landfill Monitor
Preprinted ticket number	NOT APPLICABLE	
Contract number	Contracts may be identified by a number or name	
Prime Contractor's name		
Date	X	
Truck number	X	
Truck driver's name	X	
Debris classification (vegetative, C&D etc.)	X	
Burnable (for disposal purposes)	X	
Non-burnable (for disposal purposes)	X	
Mixed (for disposal purposes)	X	
Other (HHW, white goods, etc.)	X	
Zone/Sector (where debris is removed)	If applicable	
Load Location	GPS or address preferred	
Loading time (departure from collection location)	X	
Loading Site Monitor name/signature	X	
Truck capacity in cubic yards or tons		X
Load Size, either cubic yards (percent of actual) or tons		X
Dumpsite location		X
Dumping time (arrival at disposal site)		X
Dumping site monitor name/signature		X

Each monitor will keep a copy of the load ticket and the driver/contractor will keep two copies for billing purposes.

In computer-based systems, the collection monitor gathers the same information as in a traditional paper load-ticket system and inputs this information into a handheld digital device. The collection monitor gives the hauler the information in a digital format (card or small driver). The monitor, stationed at the DMS or landfill, downloads the information and completes the transaction in a manner similar to the traditional method. The monitor, stationed at the DMS or landfill, can then print a ticket for the hauler's billing purposes.

## Special Monitoring Issues

The issues described below highlight the need for an applicant to closely monitor large contracted debris clearance, removal and disposal activities. The issues focus on some of the problems associated with major debris disposal contracts

and justify the need to monitor activities at local debris management and final disposal sites. It is essential that applicant's staff work to ensure that the debris removal contractors perform the required services at a reasonable cost.

### ***Equipment***

The most typical unit measurement for vegetative, construction, and demolition debris is cubic yard. Debris trucks are evaluated for capacity at the DMS or final disposal sites. Applicants should require contractors to use appropriate equipment to load debris efficiently so that the maximum level of compaction can be achieved to facilitate expeditious removal of debris from the public rights-of-way.

The following is a list of truck conditions and the eligible capacities.

**Hand-loaded trucks** do not have factory-built beds or tailgates that allow mechanical equipment to be used to compact the vegetative debris. Hand-loaded trailers and trucks will be reduced to 50 percent of the debris monitor's observed capacity percentage.

Example: If a hand-loaded truck or trailer appears to be 100 percent full and would normally be recorded at 100 percent, that load should be recorded at 50 percent.



Hand loading debris in trucks or trailers does not achieve maximum compaction and as a result debris removal operations take longer to complete. A hand-loaded truck hauls less debris by weight per cubic yard than a mechanically loaded truck.

**A truck with no tailgate or no solid tailgate** cannot be compacted to its full capacity, and therefore will be recorded at a maximum of 85 percent of the truck's certified capacity.



Applicants should be aware of this difference when negotiating unit costs per volume of debris hauled through hand loading versus mechanical loading and should establish standard conversion factors in the contract agreements to address those differences. Refer to *Appendix L, FEMA Recovery Policy No. 9523.12, Debris Operations, Hand-loaded Trucks and Trailers*, for additional information about hand-loaded trucks and trailers.

### ***Monitoring Tips***

There are a number of techniques used by debris contractors to inflate actual quantities of debris removed and processed. Be on the lookout for:

**Inaccurate Truck Capacities.** Trucks should be measured before operations and load capacities should be documented by truck number. Periodically, trucks should be pulled out of operation and re-measured by the applicant.

**Trucks Not Fully Loaded.** Do not accept the contention that loads are higher in the middle and if leveled would fill the truck. Monitors may check to see if that statement is valid.

**Trucks Lightly Loaded.** Trucks arrive loaded with treetops (or a treetop) with extensive voids in the load. Trucks need to be loaded to their full capacity with front end loaders or other similar equipment.

**Trucks Overloaded.** Trucks cannot receive credit for more than the measured capacity of the truck or trailer bed even if material is above the sideboards. If a truck is measured to carry 18 cubic yards it cannot receive credit for more than 18 cubic yards. However, it can receive credit for less if not fully loaded or lightly loaded as described above.

**Changing Truck Numbers.** Normally, trucks are listed by an assigned vehicle number and capacity. There have been occasions where truck or trailer numbers with a smaller carrying capacity have been changed to one with a larger capacity. (For instance, a 20-cubic-yard truck may have a number for a truck that can carry 30 cubic yards.) This can be detected if the applicant periodically re-measures the trucks or records actual state license-plate numbers in addition to a description of the truck.

**Reduced Truck Capacity.** There have been occasions where trucks have had heavy-steel grating welded two- to three-feet above the bed after being measured, thus reducing the capacity. This can be detected by periodically re-measuring the truck bed.

**Wet Debris when Paid by Weight.** Contractors have added excessive water to debris loads to increase the weight when being paid by the ton. This can be detected during monitoring if there is excessive water dripping from the truck bed, or by inspecting the truck bed immediately after unloading. The applicant should periodically re-certify the truck's tare weight.

**Multiple Counting of the Same Load.** Trucks have been reported driving through the disposal site without unloading, then re-entering with the same load. This can be detected by observing the time of departure and time of arrival recorded on the driver's load ticket. This may also indicate problems with the applicant's debris monitors at the loading or unloading site. The debris monitor at the unloading area must ensure the truck is empty before it leaves the DMS.

**Picking up Ineligible Debris.** This is difficult to detect unless debris monitors are watching the pick-up process. Monitors should have a good understanding of eligible debris (especially from private property) and any time limits imposed on pick-up of specific types of debris. Examples (from actual occurrences)

include sweeping areas for abandoned cars and white goods, cleaning up illegal dump sites, removing cut trees from subdivisions under development, and removing/cutting trees from off the rights-of-way in rural areas.



### Questions to Consider

1. Do you have a process or a plan for hiring and training debris monitors? If not, who should develop this plan?
2. Do you have access to a local labor force qualified to perform these functions?
3. What jurisdictional department will coordinate these efforts?
4. Do you have monitoring report procedures and forms established?



### To Do Checklist

1. Evaluate and identify staff that will lead the monitoring operations.
2. Identify if additional labor will be required for the monitoring operations and how they will be trained.



## Chapter 12

### Private Property Demolition and Debris Removal (PPDDR)

#### Chapter Highlights

- ◆ Condemnation Criteria and Procedures
    - Legal Documentation
    - Demolition Permitting
    - Inspections
  - ◆ Special Use Areas
    - Mobile Home Park Procedures
    - Navigation Hazard Removal
  - ◆ Labor Resources
  - ◆ Suggested Checklist
  - ◆ Questions to Consider
  - ◆ To Do Checklist
- 

Entering and removing structures and debris from private property is rare. Public jurisdictions may undertake private property demolition and debris removal operations in extreme cases where public health, life, and safety, and the economic recovery of the community-at-large are at risk. The planning staff will establish a procedure to potentially demolish and remove debris from private property. The planning effort for private property demolition and debris removal (PPDDR) includes establishing the following:

- Criteria for implementing PPDDR operations
- Documentation requirements and procedures
- Inspection and demolition procedures

Throughout the planning process, the staff needs to establish how the private property owner will be included in decisions and operations.

*FEMA Policy 9523.13, Debris Removal from Private Property*, sets forth the criteria and requirements that the planning staff needs to consider when developing its private property demolition or debris removal plan.

## **Condemnation Criteria and Procedures**

When a local government assumes the responsibility to demolish structures it must comply with its normal condemnation procedures. This normally requires a building safety official to contact the homeowner, and assess and determine the building's structural integrity.

The local government/applicant's normal building safety assessment should be used for the disaster condemnation criteria as well. Typically any building or structure may be condemned if the building official determines that it represents a hazard to the health and safety of the public, or poses a threat to the public rights-of-way. Following that determination, the local government would then initiate condemnation proceedings.

Usually, owner notification and condemnation hearings are held in order to give the property owner time to correct the threat without government action. In some cases, liens are secured in order for jurisdictions to enforce the condemnation order. In this case, if the local government/applicant performs the work, then executing liens against the property allows the local government/applicant to recoup the costs of demolition and debris removal from the property owner. When costs are recouped from property owners, the local government/applicant must repay FEMA in order to avoid a duplication of benefits.

The applicant's normal procedures that require multiple notices to property owners, condemnation hearings, and liens may be waived by the applicant in the event of a catastrophic disaster that causes a high concentration of debris on private property over a widespread area presenting an immediate health and safety hazard.

In the event of a disaster, it will be helpful to have the applicant's laws, regulations, legal notices, and forms within the Debris Management Plan, for reference and use. The planning staff will want to review the condemnation criteria and procedures for the benefit of the Debris Management Plan.

## ***Legal Documentation***

A governing jurisdiction will usually have standard procedures that apply to its condemnation process. During the planning process, the applicant may have its legal counsel review and update any documents for inclusion within the plan.

## ***Demolition Permitting***

The following is a general list of documents that may be included in the plan.

1. **Verification of Ownership** ensures that the proper site and owner are identified and the owner is aware of nature of the scheduled building assessment.
2. **Right-of-Entry Form** is signed by the homeowner and allows the building official to enter the property to complete the assessment. It often contains a hold-harmless agreement that documents the property owner's promise that he or she will not bring legal action against the applicant if there are damages or harm done to the property.
3. **Building Official Assessment** is the documentation of the damages to the structure and the description of the threat to public health and safety. This form often contains the building official's determination as to whether the structure should be condemned and whether it should be repaired or demolished.
4. **Verification of Insurance Information Form** allows the applicant to pursue financial compensation if the property owner's homeowner insurance policy covers demolition and debris removal.
5. **Archeological Review** involves an agreement for the municipality to agree to low-impact removal stipulations. These guidelines outline the archeological low-impact stipulations for demolition/debris removal activities and highlight the implications for the applicant if they fail to comply with these guidelines.
6. **National Environmental Policy Act (NEPA) Review** ensures that no environmental impacts would be encountered on the proposed site. In some cases NEPA has provided disaster-specific area waivers, which can be globally applied.

7. **Photos** that show the condition of the property prior to the beginning of the work. This is generally one or more labeled pictures that confirm the address and identified scope-of-work on the property.

If it is determined that a structure will need to be demolished, additional documentation may be required, not only for the applicant's legal protection, but also for the public's health and safety during the demolition and debris removal operations.

1. **Structural Assessment** documents the assessment performed by the building official and the description of the threat to public health and safety.

2. **Letter or Notice of Condemnation** is a document signed by the building official that outlines the specific threat to public safety and health.

3. **Notice of Demolition** is issued to inform the property owner when the demolition will begin; notices shall be posted so as to provide a reasonable period of time in order for personal property to be removed. The governing jurisdiction should attempt to notify property owner, if not already contacted, through direct mail and local media.

4. **Notice of Intent to Demolish** is conspicuously posted on the structure to be demolished. This notice is normally for the public health and safety of the neighboring residents.

5. **State Historic Preservation Office (SHPO) Review** confirms that SHPO has been notified and some correspondence has been received absolving the area of any historic significance.

Governing jurisdictions will have a demolition permitting process in place prior to an event. The planning staff may want to use these demolition permit requirements during a disaster-related demolition project.

Common requirements for obtaining a demolition permit include a demolition plan, public notification, inspection requirements, and a hazardous waste report.

The demolition plan may require the following information:

1. **Site Plan**, to scale, showing the site with all structures, structure to be removed, and other features of interest.
2. **Site Ingress and Egress Plan** showing the fronting streets and planned route for the project. This plan may also include a movement of traffic plan. Normal traffic will need to be diverted into other lanes.
3. **Site Preparation Plans** illustrate any pre-demolition work that may be required. Examples include erosion control, vegetation removal, or utility pole adjustments.
4. **Staging Plans** show the sequence of events prior to, during, and after demolition of the structure.
5. **Hazardous Waste Handling Requirements** detail if contents of the structure require dust suppression or wet demolition. These provisions also describe how hazardous waste or environmentally sensitive materials will be handled or disposed. This includes household hazardous waste and white goods.

Special plans may be required if the demolition of the building involves shoring, stabilizing structures, or any other special circumstances that may jeopardize another structure or the public's health and safety.

Once it has been established that the building is to be demolished and the required plans are underway, a Notification to Demolish notice is posted on the building.

### ***Inspections***

The governing jurisdiction normally conducts regular inspections of demolition sites: a few days prior to, the day of, during (occasionally), and upon completion of the operation. Inspectors generally take photographs at each site visit for their records. These inspections and verifications generally include the following:

1. **Water, Sewer or Sewer /tank Inspection** to verify the utilities have been terminated and isolated from the proposed sphere of influence during the

demolition operations. The inspector normally verifies that all other utilities have been terminated during the same visit.

2. **Occupancy Inspection** is conducted immediately prior to demolition to ensure that no one is physically in the building.

3. **Open Void Inspection** is performed if the structure has a basement that is to be filled. This inspection will be conducted once the above-grade structure is gone and the inspector can visually see the entire below-grade excavation.

4. **Post-Demolition Inspection** is completed once the structure is demolished, the debris is removed, and the site graded.

The governing jurisdiction usually requires that a hazardous materials report be submitted to the state environmental protection agency. This report normally includes a description of any hazardous material that was found in the building, the means and measures to collect it, and the final disposal location of the hazardous waste.

## **Special Use Areas**

The discussion so far has pertained to fairly low density situations, such as single-family homes or businesses on individual sites. Planning staff may need to consider specific areas of their jurisdiction that require additional planning and coordination for debris operations. Mobile home parks and navigation hazards present intense and sometimes complicated obstacles for the debris operations.

### ***Mobile Home Park Procedures***

Higher density situations, specifically mobile home parks, create an extensive amount of mixed debris in a relatively small area. The planning staff should consider the same procedures outlined in its PPDDR to be used in mobile home parks, but should expect a more intense operation in all accounts of the operation.

The most complex aspect of the operation may be documenting legal responsibility within the parks. Sometimes the mobile home park site is owned, operated, and maintained by one or more parties. The individual homes may be

owned by one of those same parties, or by the individuals that occupy the structure.

As part of the planning exercise, the planning staff may investigate the legal responsibility of debris issues within the mobile home parks within its jurisdiction. The governing jurisdiction may coordinate the potential PPDDR operations with the park owners in order to expedite recovery after an event. Agreements need to be made with respect to the debris collection, location, separation of materials, and the amount of debris expected to be handled.

The second planning task is coordinating demolition procedures within the park. If demolition is deemed necessary, the planning staff will employ the same procedures as discussed above, but it will require more intense coordination with the park owner, operator, and potentially the individual home owner.

### ***Navigation Hazard Removal***

Damage to publicly-owned marinas caused by a major disaster can include abandoned sunken boats and other debris that may impede navigation. The PPDDR procedures can be modified for this use.

The planning staff should coordinate with the U.S. Coast Guard, the state marine patrol, local government agencies, legal counsel, marine salvage contractors, commercial divers, and certified surveyors to ensure that navigation hazards are removed safely and efficiently. The planning staff should coordinate with U.S. Coast Guard, state marine patrol, local government agencies and legal counsel during their debris management planning efforts.

The two main challenges with navigation hazards are locating the debris and finding legal owners. Marinas can be inspected visually by a helicopter or boat. Sonar or dive teams may need to be employed for submerged vessels. A Global Position System (GPS) location or flotation marker may be helpful in order to keep its position documented.

The legal owner's information may be obtained by using the vessel's registration number and marina records. Similar to the PPDDR procedures for the buildings, a notification to the owner and an opportunity to claim the vessel must be sent. Communication and coordination with the owner will determine if the governing jurisdiction will condemn the vessel and follow the similar PPDDR procedures as described above.

## Labor Resources

Demolition and debris removal on private property is an extremely document- and labor-intensive operation. The planning staff is responsible for assigning the tasks to the appropriate departments and labor forces.

Typically, the building safety or inspection department will take the lead during these operations, with the administrative staff collecting and logging all of the required documents.

The planning staff may consider temporary personnel or contractors for any portion of the PPDDR operations.

The following table is a Suggested Checklist for Private Property Debris Removal and/or Demolition.



Property Address: \_\_\_\_\_

**Pre-Demolition**

	Action	Initial	Date	Notes
1	Establish property management file for each parcel of private property. One (1) copy each for local and state records management.			
2	Provide Notice of Condemnation			
3	Complete NHPA Section 106, NEPA, historic, SHPO reviews			
4	Obtain Right-of-Entry and Hold Harmless agreements			
5	Verify property description & ownership (i.e., tax assessment, legal description)			
6	Document property owner's insurance coverage for future recovery			
7	Notify lien holder(s), as needed, of intent to demolish			
8	Conduct building inspection as needed			
9	Conduct public health inspection as needed			
10	Conduct fire inspection as needed.			
11	Provide public notification of condemnation/demolition			
12	Verify personal property removal			

**Demolition Actions**

13	Verify structure is unoccupied			
14	Cap well, water, sewer & septic lines. Disconnect electrical service. Remove propane tanks.			
15	Mark easements and underground utilities			
16	Identify/remove/dispose of asbestos, lead-based paint & other hazardous materials per LADEQ/EPA requirements			
17	Identify/remove/dispose of all HHW per LADEQ/EPA requirements			
18	Record GPS coordinates. Photograph site before & after demolition.			
19	Document actual demolition and removal of debris			

Complete documentation is compiled within the project file for each individual structure/property.

I, the Authorized Applicant Official, certify that all processes and documentation referred to in this checklist are complete (except Item 19) prior to the demolition of the referenced structure.

Name (Print)

Title

Signature

Date



### Questions to Consider

1. How do your laws, codes, and ordinances address entering and condemning private property?
  2. What are your emergency police powers as they relate to demolishing private property?
  3. Who is responsible for enforcing the existing laws, codes, and ordinances with regard to private property?
  4. How do you (the applicant) protect yourself from legal action when taking action on a private property?
- 



### To Do Checklist

1. Review, assess, and revise laws, codes, and ordinances to address emergency demolition activities.
2. Assign a primary point of contact to address private property debris removal and demolition.

## **Chapter 13**

### **Health and Safety Plan**

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Local governments should include a health and safety plan in the overall Debris Management Plan. This enables applicants and their contractors to avoid accidents during debris recovery operations and to protect workers from exposure to hazardous materials. The health and safety plan should establish minimum safety standards for the local government and contractor personnel to follow.

To facilitate cooperation between local government and contractor employees, the health and safety plan should specify how the local government will disseminate safety information to all emergency workers and how the local government will monitor compliance with the minimum safety standards. The plan should also include specific corrective actions that will be taken if workers do not comply with the minimum safety standards.

The health and safety plan should identify potential hazards at debris loading areas and debris management sites. Debris operations involve the use of heavy equipment to move and process various types of debris. Many of these actions can pose safety hazards to emergency response and recovery personnel and the public. In addition to those safety hazards, exposure to certain types of debris such as building materials that contain asbestos, and mixed debris that contains hazardous materials can pose potential health risks to emergency workers.

The health and safety plan should provide emergency workers with information on how to identify hazardous conditions and specific guidelines on the appropriate and proper use of personal protective equipment.

## **Chapter 14**

### **Public Information Plan**

#### **Chapter Highlights**

- ◆ Assignment of Tasks
  - ◆ Information to be Included
  - ◆ Distribution Plan and Alternatives
  - ◆ To Do Checklist
- 

After a disaster, residents want answers regarding recovery operations. The goal of the public information plan is to ensure that the residents are given accurate and timely information for their use and own individual planning purposes. If information is not distributed quickly, rumors and misinformation spread and erode confidence in community leaders managing the recovery operations.

The public information plan should assign staff the following tasks:

- Prepare information to be distributed,
- Process and plan to distribute the information,
- Plan to update, correct, revise and redistribute information as operations progress, and
- Establish a debris information center or a venue to address all concerns, questions, and complaints.

#### **Information to be Included**

The information should include the parameters, rules, and guidelines of debris operations, so residents can begin their personal recovery activities. The staff responsible for developing and writing the information must present the information in a clear, direct, and organized manner. The language used must be simple and easy for all residents to understand. Jargon and acronyms will only lead to confusion and will be ineffective. Information may have to be

distributed in more than one language for it to be understood by non-English speaking populations and neighborhoods.

The public information campaign will answer the same questions addressed during the Debris Management Planning process. The following is a list of topics that should be included within the campaign:

### ***Collection***

How will the debris be collected?

If curbside collection:

- Will applicant employees or a contractor collect the debris?
- What are the schedules and the routes for collection?
- What is the final collection date for streets, sectors, or subdivisions?
- What type of debris will be collected?

If collection centers:

- Where are the collection centers?
- What are the daily collection center hours?
- Is debris to be segregated at the collection center?
- What type of debris will be accepted at the center?
- How long will the collection centers accept disaster-related debris?

### ***The Debris Management Sites (DMS)***

A collection center and/or a landfill may be the same site. If so, the same information for the “collection centers” above will apply to the DMS, along with:

- Where can a resident find a site map of the DMS for public debris drop off, household hazardous waste, construction and demolition, etc? Are these areas segregated and well marked for vehicular traffic?
- Will residents be charged a fee to use the DMS?
- Will residents be restricted as to how much disaster-related debris can be dropped off at the DMS?
- Will the DMS have burning, chipping, or grinding operations? If so, during which hours will these activities take place? Address any environmental concerns the public may have as well.
- How long will residents be able to bring their disaster-related debris to the DMS?
- How long will the DMS be open to process (reduce/recycle) debris?

- Are there traffic changes that will impact the general public due to the location or operation of the DMS?

## Distribution Plan and Alternatives

The public information plan should include a strategy to disseminate the prepared information to the general public. This can be accomplished in a number of ways. The following are suggested vehicles for distributing the information:

- **Media** – local television, radio, newspapers, or community newsletters
- **Internet Site** – applicant website and debris information flyers for printing
- **Public Forums** – interactive meeting at town hall or shopping mall kiosks
- **Direct Mail Products** – door hangers, direct mail, fact sheets, flyers within billings, and billboards

The public information staff must take advantage of every information vehicle available if power, utilities, and other infrastructure have been damaged. Many times the best carriers of information are the responders in the field. The general public recognizes their role and will frequently ask questions regarding the operations. Stocking the equipment and trucks with flyers, pamphlets and other print media allows responders to perform their duties while also satisfying the public's need for information.

### ***Update and Redistribution***

Residents will hold community leaders responsible for misinformation and slow progress if information is not routinely updated to remain current and accurate. The planning staff must consider how the public information plan will address changes and revisions as the debris removal operations progress. The change in operations will directly affect how often the information to the general public is distributed.

During the early stages of the operations, the applicants may count on the immediate transmission of the information, such as through radio and television, to update the general public regarding the debris removal operations. Once the operations become more routine and predictable, the information can be distributed through the print media, such as newspapers, mailings and flyers.

### ***Debris Information Center***

Applicants should establish a temporary debris information center to address concerns, complaints, and answer questions that are not included in the public information campaign at large. The platform for the debris information center may be personal interactions at city hall, a telephone hotline, internet site, or a specific post office box. Regardless of the venue, it is important for applicants to address the residents' concerns, complaints and questions in a timely and efficient manner.

The feedback from the information center will give the management staff an indication of how effective and efficient the operations are progressing. The management staff may use this information to adjust operations appropriately.

The debris information center may also be utilized as a "Fraud Report Center." Disaster victims have no other interest than a full and quick recovery and have little tolerance of being taken advantage of during an already trying time. The ability to report fraud and crime is important to the public's feeling of safety and well-being when the applicant's law and code enforcement agencies are stretched thin. Applicants should take advantage of residents' eyes and ears after a disaster event and provide an outlet for reporting crime and fraud within the recovery operations.



#### **To Do Checklist**

Assign staff to:

1. Prepare debris removal operations information.
2. Establish a process and plan to distribute the information.
3. Update, correct, revise and redistribute information as operations progress.
4. Establish and staff a debris information center.

## **PART III**

# **Federal Government Operations**



## **Chapter 15**

### **FEMA Operations**

#### **Chapter Highlights**

- ◆ National Response Plan
  - ◆ Operations Section
    - Public Assistance (PA) Group
    - Staff Responsibilities and Roles
- 

#### **National Response Plan**

The National Response Plan is designed to address the consequences of any disaster or emergency situation in which there is a need for federal assistance under the authority of the Stafford Act. The plan identifies actions that participating federal departments and agencies will take in the overall federal response, in coordination with the affected state. It is applicable to disasters such as earthquakes, hurricanes, typhoons, tornadoes, wildfires, and volcanic eruptions. These events can heavily damage buildings, structures, and other components of the basic infrastructure. Combined with downed or damaged trees and shrubs, the resulting debris may overwhelm state and local resources.

When a full Emergency Response Team (ERT) is activated under the National Response Plan, it consists of the following organizational elements:

- Federal Coordinating Officer (FCO) support staff
- Operations Section
- Planning Section
- Logistics Section
- Finance/Administration Section

## Operations Section

In a full ERT, the operations section will have an infrastructure support branch with the following groups:

- **Emergency Support Function (ESF) #3 Public Works & Engineering Group:** Responsible for supporting the restoration of essential public services and facilities.
- **ESF #12 Energy Group:** Responsible for providing assistance in restoring power systems and fuel supplies.
- **Public Assistance Group:** Responsible for administering grant assistance to state and local governments and certain private nonprofit organizations for debris removal, emergency protective measures, and repair, restoration, and replacement of damaged facilities.

### ***Public Assistance Group (PA)***

The Public Assistance Group is responsible for implementing the PA program. They advise and report to the Infrastructure Branch Chief and FCO. PA management identifies necessary resources, coordinates and conducts the Preliminary Damage Assessment (PDA) operations and respective program activities. PA staffing resources may include a deputy Public Assistance Officer (PAO) for debris, debris specialists, and Public Assistance Coordinators (PACs). This group is responsible for identifying major debris issues, applicants with potential debris problems, and writing the PA debris grants.

The Infrastructure Branch Chief normally directs the Public Assistance group. In some cases, this person may also be assigned as the PAO. If debris is a significant component of the disaster, then a deputy PAO for debris will be assigned and assume many debris-related responsibilities.

### ***Staff Roles and Responsibilities***

#### **Infrastructure Branch Chief**

The Infrastructure Branch Chief coordinates the restoration of essential public services and administers the PA programs. The Infrastructure Branch Chief reviews and assigns the specific debris Mission Assignments (MA) to the ERT teams appropriately. The debris specialists assigned to assist in the PDA operations are requested through the Infrastructure Branch Chief.

**Public Assistance Officer (PAO)**

The Public Assistance Officer identifies major debris issues and applicants with potential debris problems based on the PDA. The PAO identifies and, as required, obtains staffing resources for managing debris operations (e.g., deputy PAO for debris and an appropriate number of debris specialists). The PAO responsibilities include providing the deputy PAO for debris with guidance and direction on problems, procedures, and policies pertaining to debris operations. The PAO advises the infrastructure branch chief and FCO on potential debris issues.

**Deputy PAO for Debris**

The Deputy PAO for debris (DPAO) coordinates all debris-related activities, operations and organizes and chairs the Debris Coordinating Committee. The DPAO for debris identifies major debris issues and applicants with potential debris problems based on coordination with the state PAO. The DPAO reports all potential debris issues the PAO. The DPAO for debris coordinates with the Joint Field Office (JFO) attorney to review proposed debris-related contracts provided by local applicants.

Additional duties include managing all debris field staff. The DPAO for debris supervises the debris specialists and provides Public Assistance Coordinators (PACs) with guidance and direction on problems, procedures, and policies pertaining to debris operations. The DPAO provides technical assistance in preparing contracts or monitors contracts if requested. The DPAO for debris also coordinates debris mission assignments with ESF#3.

**Public Assistance Coordinator (PAC)**

A Public Assistance Coordinator is a customer-service manager who works with the applicant to resolve disaster-related needs and issues. The PAC identifies debris issues during the Kickoff Meeting with the applicant and educates them on the availability of PA funding for debris operations. The PAC works with applicants early in the process to encourage a smooth transition for debris operations from federal direct mission assignments to local responsibility, if applicable.

The PAC manages resources and coordinates with debris staff in program issues. The PAC is responsible for obtaining resources to monitor debris contractors'

activities. Potential program issues and technical review of Category A-Project Worksheets for large complex projects is conducted by the PAC, debris specialist, and DPAO for debris.

### **Debris Specialist**

The Debris Specialist serves as the DPAO's debris expert and performs technical support functions for the PACs in large complex projects. They work closely with ESF#3 and USACE and attend federal debris coordination meetings as the DPAO's representative. The debris specialist obtains copies of USACE debris situation reports and all debris contracts for their files.

The debris specialist participates in PDA operations as a technical advisor and expert. They attend the Kickoff Meetings with applicants who have significant debris problems and continue to meet with applicants to address debris removal issues as operations progress.

The debris specialist manages personnel resources and performs field functions as part of their daily duties. They advise and manage FEMA contract monitors and request additional resources when necessary. The debris specialist conducts periodic visits to all DMS and landfills in order to write progress reports and collect paperwork required for grant considerations. The debris specialist may train and perform contract monitoring functions when needed.

As the technical advisor, the debris specialist assists FEMA Project Officers (POs) and PACs in developing Category A-Project Worksheets. They also conduct technical reviews of large or complex Category A-Project Worksheets.

### **Office of Chief Counsel (OCC) Attorney**

The Office of Chief Counsel (OCC) Attorney reviews proposed and active debris contracts, right-of-entry permits, and hold harmless agreements. The OCC attorney also advises the PA staff on such issues as land acquisition, condemnations, insurance requirements, potential liability, duplication of benefits, environmental and historic preservation, and interpretation of PA regulations and policies.

**Procurement Specialists**

The Procurement Specialists review applicant's debris management and monitoring contracts for 44 CFR Part 13 procurement requirements. The procurement specialist performs liaison duties between OCC and the DPAO for debris.

**Public Information Officer (PIO)**

The Public Information Officer (PIO) provides timely news releases regarding debris removal. The PIO coordinates with the PAO to address debris-related concerns of local news media and ensure that correct information is provided to the media during press conferences.

**Regional Environmental Officer**

The Regional Environmental Officer provides guidance on environmental considerations for debris operations. The regional environmental officer also assists in determining environmental considerations for opening and closing debris management sites.

**FEMA Technical Assistance Contractors**

The FEMA Technical Assistance Contractors (TAC) can provide trained debris advisors and debris specialists as requested. The PAO or resource coordinator should specifically define the technical specialty, scope-of-work, and period of performance required of the TAC. Requests should be forwarded to the Public Assistance Branch at FEMA Headquarters.

**Joint Task Force**

The Joint Task Force includes local, state and federal personnel and is assembled to identify possible disaster-related debris removal and disposal issues. The issues identified provide the framework for the plan. Key personnel are then assigned the responsibility of reviewing specific issues and providing recommendations or solutions.

Additionally, the Joint Task Force can act as a clearinghouse for information, assist in establishing priorities, minimize duplication of effort, and provide a forum for resolving issues. The Deputy PAO for debris should organize and chair this committee.

## Chapter 16 Supplemental Assistance

### Chapter Highlights

- ◆ Mission Assignments
    - Use
    - Development
      - Scope-of-work
      - Monitoring
  - ◆ Other Federal Agency Jurisdictions
- 

### Mission Assignments (MAs)

When impacted state and local governments do not have the capability to perform or contract for debris removal and disposal, direct federal assistance may be requested from FEMA. If this request is approved, FEMA may issue a Mission Assignment (MA).

An MA is a work order issued by FEMA to another federal agency directing completion of a specific assignment in anticipation of, or response to, a Presidential declaration of a major disaster or emergency.

Direct federal assistance is subject to the cost sharing provisions applicable to the disaster, as specified in the FEMA/State Agreement. The cost share is not applied to the performance period, but when the work was performed.

Debris removal and disposal MAs are generally assigned to the USACE through ESF#3. They may also be issued to provide technical assistance when a state or local jurisdiction lacks the knowledge and expertise to accomplish an identified task.

Direct federal assistance work is limited to Category A-Debris Removal and Category B-Emergency Protective Measures, under Sections 402, 403 and 407 of the Stafford Act.

### ***Use***

Debris-related MAs could be issued to:

- Remove debris from critical roadways and facilities.
- Remove debris from curbsides and haul it to either temporary or permanent disposal sites.
- Remove debris from eligible facilities and haul it to either temporary or permanent disposal sites.
- Operate debris management sites. Monitor debris contractor's activities.
- Demolish and/or remove disaster-damaged structures and facilities in accordance with FEMA regulations and policies.
- Provide technical assistance to FEMA, the state or applicants.

### ***Development***

MAs for direct federal assistance are issued **are requested by the state** when the required disaster-related efforts exceed state and local resources.

The EST or regional operations center may issue initial debris MAs of limited scope early in a disaster using pre-scripted scopes-of-work.

Pre-scripted MAs may be issued to initiate debris-related operations; however, the DPAO for debris should review the scope before final approval. Task orders will be issued against the pre-scripted MA after it is approved. Each task order should be carefully reviewed to ensure it is clear, concise and accurate.

The Infrastructure Branch Chief, along with the PAO, should coordinate with the USACE to further define the debris MA scope-of-work based on information received from the PDA and the state. The DPAO for debris should assess immediate needs, but plan for 30-, 60-, and 90-day requirements.

### ***Scope-of-Work***

When developing a debris MA, or a task order under a pre-scripted MA:

- The scope-of-work should define the work to be done, but not the means.

- The scope-of-work should identify specific geographic locations or easily definable areas, as well as estimated types and volumes of debris.
- The scopes-of-work should be modified or new ones developed if the situation changes.

Be sure to have a good understanding of the specific debris operations required for a particular disaster. Not all disposal operations require a Debris Management Site, and not all debris should go to a DMS; some can go directly to a disposal site.

### **Monitoring Mission Assignments**

Contract monitoring is the key to successful debris operations. In a debris MA, the USACE achieves this by:

- Assigning personnel to work sites to monitor contractor's performance.
- Ensuring that contract monitoring personnel are trained and carefully briefed.
- Sending progress reports through the ESF#3 to the DPAO for debris on a periodic basis. The DPAO for debris establishes the frequency of the reports.

The FEMA project monitor is assigned when the MA is implemented. This individual should make periodic visits to all job sites to monitor overall performance.

### **Other Federal Agency Jurisdictions**

Even though USACE is assigned to debris missions, they also have jurisdictional authorities over particular waterways, along with National Resource Conservation Service (NRCS). Applicants should become familiar with these authorities and be sensitive to the potential duplication of benefits if multiple federal agencies are involved in debris operations. *Appendix H, Flood Control Works, Eligibility for Federal Assistance in Presidentially Declared Disasters*, illustrates the differences between USACE and NRCS. *Appendix B, Federal Agencies Authorities Related to Debris Management*, summarizes other federal agencies and their authorities and roles in debris management.